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Front cover: Stinking Hellebore *Helleborus foetidus* photographed by the Sheffield & Tinsley Canal and described by Ken Balkow during his talk to the South Yorkshire Natural History Day (see p66).

Back cover: The South Yorkshire Natural History Day event, held in Treeton near Rotherham in February 2018, was well attended by the region's naturalists. Photo: Bob Clinging

The Naturalist

From Cow Green to Re-wilding

The Presidential Address delivered following the Annual General Meeting, 18th November 2017.

Sarah White

When John Bowers generously invited me to become President, he explained that this was because of my conservation work in Yorkshire during the 1970s and 1980s, initially in the East Riding and later in the Yorkshire Dales, while working for the Nature Conservancy Council (NCC). I have therefore chosen in this Address to take a look back at the last 50 years of conservation.

My somewhat cumbersome title reflects the issues which, for me, mark the beginning and end of this period: Cow Green Reservoir was the first conservation controversy of which I was aware; 'Re-wilding' is the latest, and to my mind the most exciting, new initiative.

This is very much a personal perspective, reviewing some of the stories which have had a particular resonance for me. It is not a comprehensive picture, nor is it just about Yorkshire, as my work has taken me to other parts of the country too. Some stories are positive, some negative, so it turns out to be a bit of a rollercoaster ride. Unfortunately much has been lost in this 50 year period, but there have been many worthwhile gains too.

My starting point is Upper Teesdale, which I first visited as a Durham University student in 1974 and have loved ever since. The metamorphosed Carboniferous Limestone, known as 'Sugar Limestone', together with the exposed climatic conditions, have given rise to the unique arctic-alpine flora including specialities such as Spring Gentian *Gentiana verna*, Bird's-eye Primrose *Primula farinosa*, False Sedge *Kobresia simpliciuscula*, Alpine Bartsia *Bartsia alpina*, Mountain Avens *Dryas octopetala*, Teesdale Sandwort *Minuartia stricta*, and Teesdale Violet *Viola rupestris*.

In the early 1960s the Tees Valley and Cleveland Water Board put forward a proposal to build a reservoir in Upper Teesdale to provide water for Teesside industries including ICI. Despite a vigorous conservation campaign, the reservoir went ahead, built between 1967 and 1971.

Lost under the reservoir (Clapham, 1978) were 10% of the area of the sugar limestone and flush communities on Widdybank Fell, including unthinkable proportions of some of the rarest species:

- 100% Tall Bog Sedge *Carex magellanica*
- 40% Rare Spring Sedge *Carex ericetorum*
- 10% Teesdale Violet *Viola rupestris*
- 40% Alpine Rush *Juncus alpinoarticulatus*

As a mitigating gesture, ICI gave £10,000 a year for 10 years for a programme of research to study the floristics and ecology of Upper Teesdale. Moreover, despite the loss of land under the reservoir, we still have the very extensive Upper Teesdale National Nature Reserve (NNR) of 8,800ha (88 sq km). As a postscript, I am also delighted to say that Tall Bog Sedge was not entirely lost from the North Pennines after all: the latest BSBI distribution map shows that there are new records for this lovely sedge elsewhere in Upper Teesdale. For a fascinating and full account of the Cow Green debacle, see Roy Gregory's book, *The Price of Amenity*, 1971.

The next story is from Suffolk, where the return of the Avocet *Recurvirostra avosetta* as a regular breeding species caught my imagination as a young birdwatcher. Avocets bred on the east coast of England until the early Nineteenth Century, their decline probably a result of persecution, and they only began to recolonize suitable sites on the Norfolk and Suffolk coasts when public access was restricted during the Second World War. Avocets bred at both Havergate and Minsmere in 1947 and the RSPB purchased Havergate Island as a reserve in the following year. In 1955 the Avocet first appeared on the RSPB tie, although it was not used as their logo until 1970. It was a particular delight for me to see these beautiful birds breeding in Yorkshire, at Tophill Low, on the VC61 Excursion in 2012.

The other iconic return was that of the Osprey *Pandion haliaetus* to Loch Garten in 1954, having been extinct in Britain since the early Twentieth Century as a result of relentless persecution. 'Operation Osprey' became one of the best known conservation stories of all time when RSPB made the brave decision to give the public an opportunity to see the birds, while providing 24 hour surveillance by teams of volunteers. Ospreys have since been reintroduced to England, and they have re-colonized Wales too; indeed there are now some 300 pairs in the UK as a whole.

The story of nature conservation in the Twentieth Century has also been about influential people. No one would deny the important contributions made by David Attenborough and Peter Scott, both household names, but one of my greatest conservation heroes is a man whose name is not widely known. Derek Ratcliffe was NCC's Chief Scientist 1974-89; he was a superb all-round field naturalist, and the architect of Britain's Post-War nature conservation policy through his identification of the UK's most important wildlife sites, based for the first time on sound scientific criteria, and culminating in the publication in 1977 of *A Nature Conservation Review*. Moreover, his perceptive and painstaking scientific work saved the Peregrine Falcon *Falco peregrinus* from probable extinction. He documented the catastrophic collapse of the UK Peregrine population from the mid 1950s and recognized that this was due to eggshell thinning caused by organochlorine pesticides such as DDT accumulating in the birds' bodies. Indeed the effects were worldwide and affected other raptors as well: as a child in the 1950s and 1960s, I

never saw a Sparrowhawk *Accipiter nisus*. Since these pesticides were banned, the Peregrine population has now climbed to 1500 pairs and they have re-colonized their old breeding sites as well as becoming successful urban breeders.

However, we still have a very long way to go in safeguarding our birds of prey, as illegal persecution remains a major problem. A Scottish Natural Heritage report in May 2017, which followed satellite-tracked Golden Eagles *Aquila chrysaetos*, found that eight birds went missing over a five year period in just one small area of Inverness-shire. Moreover, of 131 young eagles tracked over 12 years, 41 (31%) disappeared under suspicious circumstances, almost exclusively in areas connected with illegal persecution.

Hen Harriers in England are on the very brink of extinction, entirely as a result of illegal persecution. In 2017 there were just three successful nests from a total of seven attempts, producing 10 fledged young. All of these successful nests were in Northumberland. There was no breeding success in Special Protection Areas (SPAs) in Bowland and the North Pennines, despite the fact that these sites were designated to protect 13 and 11 pairs of Hen Harriers respectively. Moreover, it is estimated that there is habitat available in England for a population of at least 300 pairs. Most recently, here in Yorkshire, on Denton Moor in Nidderdale, a pair of Marsh Harriers with five eggs in the nest appear to have been illegally targeted and the police are investigating.

The satellite-tracking of birds offers a very exciting use for new technology. We have lost over half of our Cuckoos *Cuculus canorus* in the last 25 years and since 2011 the British Trust for Ornithology (BTO) has been satellite-tracking a number of birds to try and establish some of the reasons for this. Their data reveals that our Cuckoos follow two distinct migration routes: one southwest through Spain (a route favoured by birds from England) and the other southeast through Italy (a route favoured by Welsh and Scottish birds). Mortality has been shown to be greater on the southwest route, and this could be one of the reasons that our English Cuckoos are doing less well than those from further north and west. Another fascinating result is the amount of time spent on migration. Chris, one of the first Cuckoos tagged, and named after BTO President Chris Packham, was followed between 2011 and 2014. He only spent 15% of his time in Britain, 38% travelling on migration and 47% in his wintering grounds in the Congo. Sadly Chris was lost in August 2015 on his southward migration, having provided invaluable data for four consecutive years.

Ospreys too have been satellite-tracked, many by Roy Dennis; my husband, Ken, and I have a particular fondness for one of his birds called Beatrice. She was tagged in 2008 and was unusual in that she over-wintered in southern Spain, choosing not to travel all the way to Africa. Each autumn Ken and I go to Spain for the raptor migration and one year we spotted an Osprey over the Rio Guadiaro not far from where we stay. We could immediately see that this bird was carrying a satellite transmitter on her back, and some quick research on the internet soon revealed that this was one of Roy Dennis's Ospreys called Beatrice. How wonderful that we could so easily identify this bird and find out her life history! Sadly Beatrice died in bad weather on her return in March 2016, but like Chris the Cuckoo, she had provided an invaluable set of data, as well as successfully rearing a total of 16 chicks.

In 1999, Roy Dennis had the idea of reintroducing Ospreys to mainland Spain after their absence there for half a century. He developed a reintroduction programme in partnership with Finland and Germany, and in July 2003 the first four young birds were released. In 2005, the first Ospreys bred – a German male and a Scottish female. This seems a very appropriate reciprocal arrangement, in return for Spain having provided the Red Kite *Milvus milvus* chicks for the UK's reintroduction programme.

The Wildfowl and Wetlands Trust (WWT) is expert in rearing waterfowl and helping them back from extinction, and their recent work with the diminutive Spoon-billed Sandpiper *Calidris pygmaea* is no exception. The population of this bird plunged to fewer than 200 birds worldwide, one of the factors being low breeding success in the wild. WWT has implemented a programme of collection and incubation of eggs to increase the success rate, as well as fitting some birds with satellite tags in order to shed further light on their breeding and wintering areas. They are also attempting to establish an 'Ark' population through captive breeding.

Today, children are probably totally unaware of 'car splats', but when we were young, windscreens and car number plates were liberally splattered with insects after any length of journey. Worried about the fall in numbers of flying insects, RSPB used this as a way of measuring their abundance in the 'Big Bug Count' of 2004, in which 40,000 people took part. Shockingly, the results showed that there was, on average, only one splat for every 5 miles travelled.

A more recent University College London Study (Dirzo *et al.*, 2014) has revealed devastating results: Invertebrate numbers have nearly halved as human population has doubled (down 45% over a 35 year period) and habitat loss and climate disruption are viewed as the main causes. A recent German study, reported on the BBC's 'Autumnwatch' programme, revealed an even worse scenario in which the biomass of large flying insects fell by 75% between 1989 and 2016.

There is the same depressing story about the decline of farmland birds. *The State of the UK's Birds 2017* (Hayhow *et al.*, 2017) shows that the Breeding Farmland Bird Index in the UK is now less than half its 1970 level, and over this 50 year period, Turtle Doves have declined by 96%; Skylarks by 62% and Lapwings by 50%.

The same situation applies to arable plants, our delightful weeds of cultivation, which have also suffered in the interests of more efficient farming. An example is the wonderfully-named Shepherd's Needle *Scandix pecten veneris*. In Robinson's 1902 *Flora of the East Riding*, it is described as occurring 'in all cornfields'; in Eva Crackles' 1990 Flora, it is recorded as 'now very rare' and on Richard Middleton's current VC61 website, only 3 sites are recorded. An impressive local initiative was the North York Moors Cornfield Flowers Project 1997-2015, which aimed to safeguard the dwindling populations of arable plants around the North York Moors National Park. The brainchild of Nan Sykes, the project involved the collection of seeds, growing plants on and returning them to farmland, as well as contributing seed to the Millennium Seed Bank. In addition it sought to raise awareness amongst the general public of the plight of arable flowers and to encourage farmers to use Environmental Stewardship schemes to help arable plants on their land. Shepherd's Needle was one of the many species which benefited from this

successful project.

The common factor in all these losses is pressure on wildlife and wild places by the rise in World population, now 7.6 billion, and set to rise to 11.3 billion by 2100. Only 50 years ago, it was a mere 3 billion. In the UK, our population has increased from 50 million in the 1950s to 66.5 million in 2018.

It is however enormously impressive that we have such good information about our wildlife and we are able to document these changes. The reason, of course, is that there is an unpaid army of wildlife volunteers who record these data. Now called 'Citizen Science', it is something of which to be enormously proud. For example, the BTO's Breeding Bird Survey (BBS) is the main scheme for recording for *The State of the UK's Birds* reports, and in 2016 there were 3,800 BBS surveys carried out by volunteers in the UK. An even larger project is the RSPB's 'Big Garden Birdwatch', which has half a million contributors producing eight million records.

Moreover, a strong voluntary conservation movement gives wildlife a voice. The Wildlife Trusts have 800,000 members; the RSPB have 1.2 million members and the National Trust 4.5 million members. Public engagement with wildlife has never been greater according to our television watching habits: Countryfile has 4.7 million viewers; Springwatch 2.4 million viewers, while Blue Planet II had 10.6 million viewers – more than *Strictly Come Dancing*!

However, I have a sneaking concern that many people are content with a 'virtual' wildlife experience, through television, or indeed through the evocative road names which seem to document the loss of our wildlife: Kestrel's Mead, Nightingale Way and Bluebell Meadow are all names of new housing estates near to where we live.

Over the fifty years, the emphasis of conservation has changed from one of purely identifying and seeking to protect sites, to one in which habitats are also created or restored, or species reintroduced, in an attempt to redress the destruction of the past. I want to finish this personal review with examples of an inspiring new initiative which seems to be a valuable way forward for wildlife: Re-wilding. One of the earliest schemes was Craig Meagaidh in NW Scotland, an NNR of 4000ha, where the far-sighted decision was taken some 30 years ago to reverse centuries of land degradation from overgrazing by deer through reducing the stocking levels. There has been spectacular regeneration of trees as a result. Closer to home, South House Moor on Ingleborough had sheep grazing removed 17 years ago, successfully allowing heather to return to the degraded moorland. But the largest of these projects is the Mar Lodge estate in the Cairngorms, where the National Trust for Scotland manages some 29,300ha. Deer grazing was reduced here 15 years ago to encourage the regeneration of 200ha of pine woodland which will link with adjacent re-wilding projects at Abernethy and Glenfeshie.

A different sort of re-wilding was undertaken at Alkborough Flats on the Humber estuary, where 440ha of intensively managed agricultural land was flooded through a managed retreat project. This scheme, and others like it around the country, is at long last reversing the wave of coastal agricultural reclamation which NCC and others fought hard to resist in the 1980s. Wallasea Island is a new RSPB reserve in Essex, engineered using material excavated from the Crossrail project, in which 670ha of farmland will be allowed to revert to coastal marshland. In

the fenland of Cambridgeshire, the Great Fen Project is one of the largest restoration projects of its type in Europe, and will transform the landscape of the fens between Peterborough and Huntingdon over a fifty year period. The plan is to create an enveloping landscape of 3,700 ha around the isolated existing NNRs of Woodwalton Fen and Holme Fen. Through purchase and restoration of farmland, these fragments will be joined together and greatly enlarged, recreating the extensive fenland habitat which was once characteristic of this area.

In the south of England, not far from where we live, the 1000ha Cholderton Estate in Wiltshire has been managed to balance farming and wildlife for the last 30 years. Large blocks of land have been encouraged to revert to chalk grassland; the arable fields are full of wildflowers such as Prickly Poppy *Papaver argemone*, Fumitories *Fumaria* spp., and Venus's Looking Glass *Legousia hybrida*; Stone Curlews *Burhinus oedicnemus* breed as well as Corn Buntings *Emberiza calandra* and Skylarks *Alauda arvensis*.

Another example from the south is the Knepp Castle Estate comprising 1,400ha in West Sussex. Farmed with support from Natural England through the Higher Level Stewardship scheme, Knepp's ethos is to encourage natural processes, with free-roaming grazing animals (cattle, ponies, pigs and deer), acting as proxies for herbivores that would have grazed the land thousands of years ago. Their different grazing preferences help create a mosaic of habitats from grassland and scrub to open-grown trees and wood pasture. In just over a decade Knepp has seen an astonishing increase in biodiversity and it is now a breeding hotspot for Purple Emperor butterflies *Apatura iris*, Turtle Doves *Streptopelia turtur* and 2% of the UK's population of Nightingales *Luscinia megarhynchos*.

I can only conclude by quoting the sentiments of Professor Sir John Lawton in his 2010 Review of England's Wildlife Sites and Ecological Network, *Making Space for Nature;* England's wildlife and landscapes have inspired and delighted through generations; our natural world is not a luxury, it is fundamental to our well-being, health and economy. We need to be confident that England's wildlife sites comprise a coherent and resilient ecological network to protect this fundamental resource for the future. His recommended way forward is that we should protect more wildlife sites; they should be bigger and better managed, and the network of sites should be joined up by habitat creation. Re-wilding projects, such as those which I have described, will help to do exactly this.

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Dealers, breeders, preservers and stuffers – some late nineteenth century 'Naturalists' in Yorkshire with brief biographical notes

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Introduction

What is a Naturalist? One who spends his or her leisure time in the field, often with binoculars or a lens, collecting data, identifying animals and plants and perhaps in conservation work or is he/she a taxidermist, preserver, or a professional bird breeder and dealer? It appears 'Naturalists' could sit comfortably in more than one category! Dictionary definitions help - *The Chambers Dictionary* states "Naturalist – one who studies nature, more particularly zoology and botany, esp. zoology, and esp. in the field: a dealer in live animals and articles of use and interest to students of nature, often a taxidermist" and in *The Concise Oxford Dictionary* "student of animals or plants; dealer in cage animals, dogs, etc.; taxidermist".

The term, which appears to have changed somewhat in the public's understanding since the 19th century, rests on whether the person regards the work as an occupation or a pastime.

The 1881 Census forms for Yorkshire were checked under the heading – 'Occupation' for any person calling themselves a 'Naturalist' – with 'stuffer', 'dealer', and/or 'animal preserver' oft times added to this description by the enumerator. The term 'Naturalist' encompassed fish and bird breeders and 'poultry breeders' and the animal preservers included 'entomologists'. The majority made a living out of it, a significant number being generalists offering several services (as 'Naturalists') at the same time. Taxidermy was often not their only occupation. Many combined their work with a variety of other jobs such as joiner, grocer or tobacconist. Thomas Altham was a 'joiner and naturalist', William Foulds 'a grocer and naturalist' and Lazarus Baldera a 'tobacconist and naturalist'. There were only ten from Yorkshire who described themselves as 'Taxidermist' in the census return - Francis Harland, Robert Lee, Edward Chapman [there is a P. Chapman and a Henry Chapman, both York], Alfred Daynes, Charles Blamire [there is a Charles Blamini, address given as Marshall St, Holbeck, Leeds], Richard Bell, George Lumb, Thomas Webster, Joseph Ripley and Edward J. Bell. Some combined their commercial work with active membership of their local natural history society or club and in that sense were true naturalists.

Taxidermy in the 19th century

The second half of the 19th century "saw the liberation of taxidermy as an art and as a commercial enterprise" (Morris, 1993) and, in terms of commercial taxidermy, new business start-ups peaked in Britain in the 1880s (Morris, 1993). Bird books flourished, museums opened and the taxidermy business took off. Every small town had a taxidermist and the larger cities had several. Birmingham alone had 18 taxidermists operating in the 1880s (Morris, 1993). Shrubb (2013) gave a figure of "at least 501 dealers, taxidermists or bird stuffers in England and Wales... which included a total of around nearly 300 from Yorkshire" working in the 19th and 20th centuries. Many of the enterprises were short-lived but it indicates the scale of the business. People bought, collected, swapped and sold specimens and there were heavy demands for the Victorian parlour. Being a 'Naturalist' was a thriving industry supplying collectors, wealthy individuals, museums and stately homes. Sometimes there developed a "rampant commercialisation with distinctly unsavoury fringes" (Allen, 1978) with some fraudulent dealers operating. Bircham (2007) describes in detail the story of the Hastings Rarities and the taxidermist George Bristow, whose business was run from a shop at St Leonards-on-Sea and who appears to have been one of the well-known fraudsters.

Museums and taxidermy

There was employment for 'bird stuffers' in museums, the larger ones employing at least one full-time taxidermist, as well as for dealers, who often ran their business from a shop. The role of museums has changed over time and now, instead of displaying large numbers of birds in one room, if birds are displayed at all there are fewer of them and they are usually framed in a habitat setting. The Tolson Museum in Huddersfield (currently under threat of closure) has a traditional bird room dedicated to the art of taxidermy. By means of carefully constructed displays, one of the roles of modern museums is to draw the attention of the visitor to the risks of extinctions and the need for conservation, although a few people claim that taxidermy itself may have led to extinctions!

Other than 'Taxidermist'

Although taxidermists form the largest group, dealers, breeders and even insect preservers were all mentioned as occupations by name in the 1881 census. Edward Bairstow, for example, described what he did as "bird merchant, taxidermist, cage maker, wholesale and retail dealer in gold fish, aquaria" (see Bairstow entry). On the other hand, William Heap bred caged birds and his entry in White's Directory was "English & Foreign Bird Dealer" (see Heap entry).

The Yorkshire scene

The oldest known Yorkshire taxidermist is thought to have been William Bielby from Frenchgate, Doncaster who worked during the late 18th and early 19th centuries (handwritten note in Marshall, 2009). The county of Yorkshire, as it then was, had a number of well-known taxidermists in the 19th century including Robert Dunn (1789-1859) of Hull (Williams, 2012), George Mussel (or Mussett, active from c.1880 to 1910) and Thomas Nelson Hudson (1856-1916) both of Middlesbrough, Jabez Bancroft (1833-1897) of Keighley and Charles Waterton (1782-1865) of Walton Hall near Wakefield (website). When Cliffe Castle Museum opened in 1899 it purchased many of Bancroft's skins and mounts (McGowan pers. comm. 15 Feb 2017). Marshall (2009) lists c.300 taxidermists from Yorkshire for all dates. In her introduction she states "The more I look into the history of taxidermy, the more I realise that this type of research will never be

completed". The 1881 census list indicates that taxidermists were scattered throughout the County, mainly in cities with several each in Bradford, Leeds and Sheffield. In Sheffield "in their heyday, between 1896 and 1899, no fewer than twelve [professional] taxidermists were listed (Riley and Riley, 1978).

In regard to the categories below, there is sometimes no clear classification for some of the 'Naturalists' and they could equally appear in two or sometimes even three of the categories. We have tried to select their predominant activity and, when this applies, mention them elsewhere as appearing in an alternative category.

Category: The real 'Naturalists'

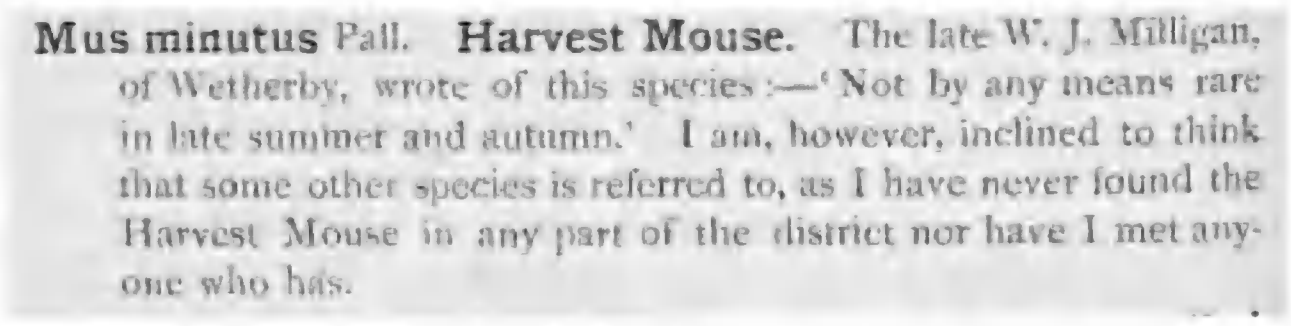
Thomas Altham (1838-1911) was born at Mitton, Yorkshire. Timber merchant, wheelright, joiner and amateur naturalist. In 1881 he was living at Eddisford Cottage, Great Mitton. By the time of the 1891 Census he had removed to Bashall Hall, Bashall Eaves. He fitted up bird boxes in local woods, supplied T.H. Nelson with notes for *The Birds of Yorkshire* (1907), presented specimens of the Saw Wasp (*Sirex juvencus* [Steely-blue Wood Wasp]) to the Liverpool Museum (Anon, 1879). See Mitchell (1892) for many references to T. Altham. He provided ornithological records from the Clitheroe area (Altham, 1881), notes on the breeding of the Starling (Altham, 1889) and lists of birds, some for Stonyhurst College (Anon, 1910; 1911). Thomas Altham is described as a "rustic naturalist" in Anon (1914a). Like many before (and after) him he was also an egg collector.

James Fogg (c.1820-1900) was born at Kirklington, Yorkshire. Fogg (1882): "Will exchange nine trays, which contain 680 minerals. In want of British birds' eggs (side blown), or an entomological cabinet. What other offers? No live stock". J. Fogg, 14 Upper Fountain Street, Leeds. There are records that Fogg was active in the Wakefield Naturalists' Society and those of Barnsley and Leeds, exhibiting geological material, stuffed birds and birds' eggs, but mainly insects, including the Greater Horntail Wasp *Urocerus gigas* (Fogg, 1875-6). He represented the Wakefield Society as its delegate to the Yorkshire Naturalists' Union in 1875/6.

John Hauxwell (c.1852-1924) was born at Richmond, Yorkshire. He was the Vice President and Curator of museum/collection for Richmond and North Riding Naturalists' Field Club, exhibited stuffed birds at the Field Club, "a case containing several varieties of the Hummingbird" (Anon, 1876). Recorded as a Cabinet Maker and latterly as a Fixing Joiner for a School Furnishing Company in Darlington. He died there in 1924.

Charles Helstrip (c.1831-1918) was born at Tockwith, York. He worked at St Saviour's Place, York, as a "carver, wood turner and naturalist". He was an active entomologist and member of the York Entomological Sociey where he exhibited insects. Anon (1859) lists his interest as "British Lepidoptera" and Anon (1860): "removed from 39 Redner Street, Layerthorpe, York to 5 Apollo Street, Heslington Road, near York". See also Nelson (1907). Recorded as contributing to the list of mammalia, reptiles and freshwater fishes for Clarke & Roebuck (1881). At the time of the 1881 Census he described himself as a "Bird and Animal Preserver." He retired to Haxby, where he was still described as a "Naturalist" in Kelly, 1913. Also in Marshall (2009).

William J. Milligan (c.1831-1886) was born in Perth, Scotland. He lived in Wetherby and was active in the YNU, displaying cases of birds at meetings and contributing to lists of the local fauna. He was well thought of as a naturalist. He was an active member of the Glasgow Field Naturalists' Society, reading papers and exhibiting (Anon, 1875a). Later at Wetherby as a member of the Leeds Naturalists' Club and Scientific Association (several entries recording his work are in *The Naturalist* around this time) including exhibiting a pair of Pintail ducks (Anon, 1880).



Mus minutus Pall. **Harvest Mouse.** The late W. J. Milligan, of Wetherby, wrote of this species:—'Not by any means rare in late summer and autumn.' I am, however, inclined to think that some other species is referred to, as I have never found the Harvest Mouse in any part of the district nor have I met any-one who has.

Extract from *The Naturalist* March 1891 p.86.

Seth Lister Mosley (1848-1929) Curator of the Tolson Museum, Huddersfield and at Bradford and well known regional naturalist. Brooke (2012) provides details of Mosley's career and describes him as Huddersfield Naturalists' Society's "best known member due to his prolific output of illustrations, pamphlets, newspaper columns and occasional books, as well as his long struggle to establish a museum for Huddersfield". For further details on Mosley, see Brooke (2012) and Davies (1992).

Alfred Roberts (c.1812-1887) was born at Glanford Brigg, Lincolnshire. He was the Curator of the Scarborough Museum, living in King Street, Scarborough, and well known as a careful and painstaking worker and reliable ornithologist (Clarke & Roebuck, 1881; Nelson, 1907). He died in Scarborough.

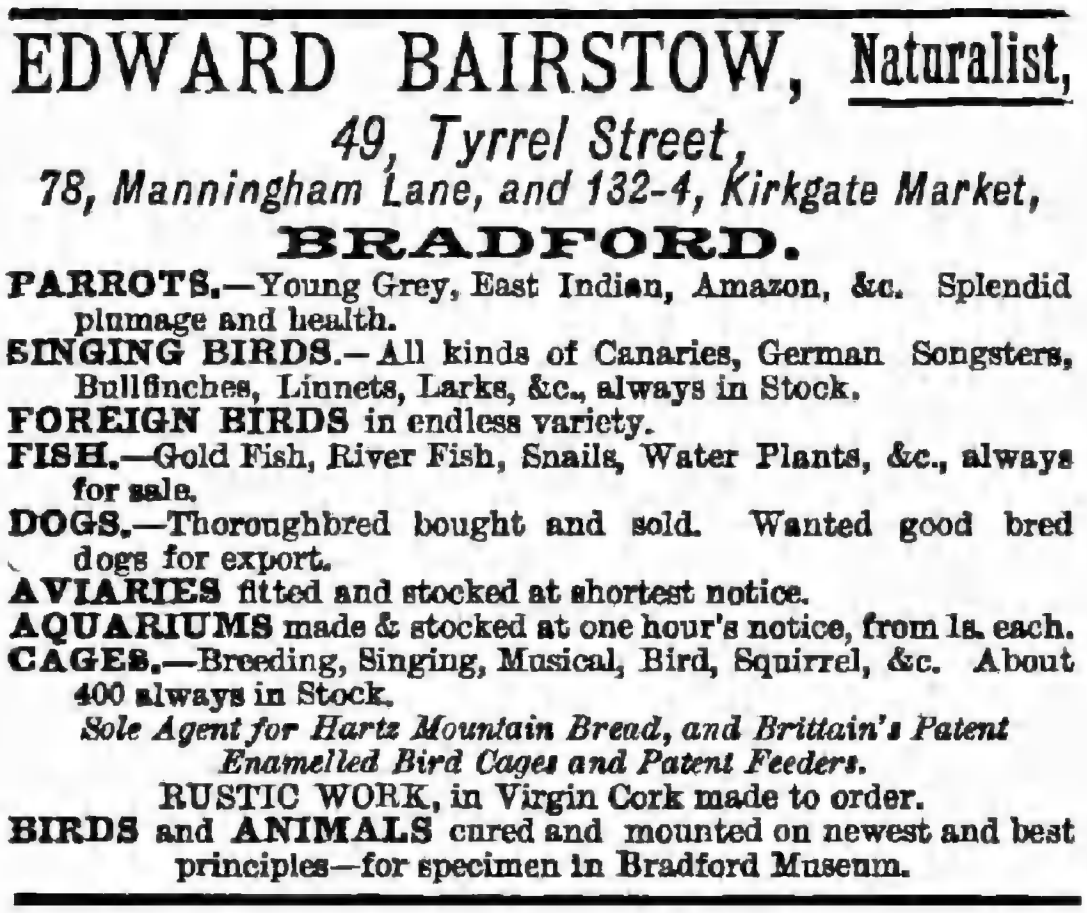
Category: Breeders

William Heap (c.1838-1903) was born in Bradford. Bird Dealer. He bred caged birds. In the Directory of Leeds, Bradford etc. 1866: Heap, Wm., Bird Dealer, 30 Bridge St. and 33 Great Horton Bank, Bradford. Also in White's Directory of Leeds & the West Riding. 1870: Heap, William, English & Foreign Bird Dealer, 29 Queensgate and 32-33 Old Road, Great Horton. He exhibited caged birds at the Crystal Palace Exhibition in the 1860s (Anon, 1914b). In a newspaper article it was claimed that he was the first to breed the "Yorkshire canary" (Anon, 1914c), a claim later refuted. In Kelly (1881) he appeared under the heading of "Bird and Animal Preservers" at 30 Bridge Street, Bradford and in later directories listed as "Naturalist". He died in Bradford.

Enoch Hutton (c.1833-1906) was born in Pudsey, Yorkshire. Described in the 1871 Census as "a practical ornithologist", in 1881 "a Naturalist", in 1891 "a Practical Naturalist" and in 1901 as a "poultry and dog judge". Other sources record him as a "poultry breeder". He was the author of "The Farmer's and Amateur's Guide to Poultry Keeping". He died in Pudsey.

Category: Merchants - some of those calling themselves 'Dealers'

Edward Bairstow (1851-1904) was born in Wibsey, Bradford. Operating from 132-134 at the Market Hall, Bradford, he later moved to Poulton, Morecambe. A naturalist employing 2 boys in the 1881 Census but described as a Warehouseman at his marriage in 1872. In The Post Office Directory of Bradford 1883: "Bairstow, Edward, naturalist, bird merchant, taxidermist, cage maker, wholesale and retail dealer in gold fish, aquaria, and glass shades". He died at Torrisholme, Lancashire in 1904. Not mentioned in Marshall (2009) but see also under Taxidermists.



EDWARD BAIRSTOW, Naturalist,

49, Tyrrel Street,

78, Manningham Lane, and 132-4, Kirkgate Market,

BRADFORD.

PARROTS.—Young Grey, East Indian, Amazon, &c. Splendid plumage and health.

SINGING BIRDS.—All kinds of Canaries, German Songsters, Bullfinches, Linnets, Larks, &c., always in Stock.

FOREIGN BIRDS in endless variety.

FISH.—Gold Fish, River Fish, Snails, Water Plants, &c., always for sale.

DOGS.—Thoroughbred bought and sold. Wanted good bred dogs for export.

AVIARIES fitted and stocked at shortest notice.

AQUARIUMS made & stocked at one hour's notice, from 1s. each.

CAGES.—Breeding, Singing, Musical, Bird, Squirrel, &c. About 400 always in Stock.

Sole Agent for Hartz Mountain Bread, and Brittain's Patent Enamelled Bird Cages and Patent Feeders.

RUSTIC WORK, in Virgin Cork made to order.

BIRDS and ANIMALS cured and mounted on newest and best principles—for specimen in Bradford Museum.

Advertisement in Kelly's 1881 Directory of the West Riding.

William Brownridge (c.1832-1915) was born in Leeds. He was a naturalist-bird dealer ("animal/bird"). His original occupation was a Flour Dealer, then a General Dealer and by 1870 "a Bird Dealer" at Ramsden Terrace, Leeds. In Kelly (1881): "Brownridge, William, 9 Oastler Terrace, North Street, Leeds". Under Bird Dealers: "Brownridge, William, 22 Thornton's Arcade, 79 Briggate, Leeds". In the 1901 Census he described himself as "a retired Naturalist". He died at 147 Spencer Place, Leeds in 1915. Not in Marshall (2009). His son Charles became a member of the YNU and a Fellow of the Geological Society.

William Heap (see Breeders)

Squire Cliffe (c.1833-1885) was born in Halifax. He was a "General Dealer and Naturalist" and later described as animal preserver. In Kelly (1881): Under Bird & Animal Preservers: "Cliffe, Squire, 50 St. James Road, Halifax" and in the 1881 Census at 2 Chapel Street, Harrogate. Not in Marshall (2009).

Francis Mitchell (c.1845-1899) was born in Bowling, Bradford. The Post Office 1879 Directory of Bradford records him as "British Fern Collector and Dealer" of Carr Top,

Wibsey, North Bierley. At his marriage in 1881 he was described as a "Naturalist" and "Naturalist (Artist)" in the 1881 Census. His wife, Lydia was recorded as an "Assistant Preserver". In the 1891 Census his occupation is given as "an Alpaca Wool Sorter (employed), Fernist (neither employed nor unemployed)". Appears to have moved from being a wool sorter (c.1871) to a naturalist but may have done both at the same time. In The Post Office Directory of Bradford 1883 there is also a mention of Mitchell & Gregson, bird dealers, 44 Thornton Street, Queensbury, though whether this is associated has not yet been determined. He died in 1899 at Fern Cottage, Odsal Top, Bradford. Not mentioned by Marshall (2009).

Category: Commercial 'Taxidermists'

Though the names appearing below were actually taxidermists they described themselves in the census return as 'Naturalists'. No account is given of the 'Taxidermists', so described, in their returns. Some names listed below do not appear in Marshall's catalogue and could therefore be newly discovered taxidermists.

Lazarus Baldera (c.1836-1905) was born in Lucca, Tuscany, Italy but lived and worked as an Electro Plater (silver) in the Sheffield industry. In White (1879): "114 Upper Allen Street – Baldera, Lazarus, tobacconist & bird preserver". In Kelly (1881) under Bird & Animal Preservers: "Baldera, Lazarus, 114 Allen St. Sheffield". From 1884 to 1887 listed at 368 Langsett Road (Riley & Riley, 1978).

Edward Bairstow (see also Merchants).

Squire Cliffe (see also Merchants); not in Marshall (2009).

George Crosby (c.1805-1882) was born at Longmarston, Yorkshire. "Animal Preserver". 'Montagu Arms', Mexborough, inn keeper - naturalist by 1870. In Marshall (2009), from Doncaster Museum & Art Gallery records.

George Rivers Cull (c.1850-1896) was born in Worcestershire, later working in Leeds as a "Naturalist" to which the enumerator has appended "bird stuffer". He was a member of the Leeds Naturalists' Club and Scientific Association and in list of Members at 27th February 1877: "Cull, G. R., 59 Hunslet Lane, Leeds". (Elected 30th January 1877 - paying 5s. per annum). He appears under the heading of Bird and Animal Preservers in Kelly (1881). By 1888 in Kelly's Directory of Leeds he is described as a Naturalist and also appears under the heading Taxidermists and Entomologists, at which juncture he is at 68 New Briggate. Not in Marshall (2009).

William Foulds (c.1826-c1897) was born in Bradford and lived in Shipley. The 1881 Census described him simply as "Naturalist" and by the age of 65 was describing himself as a "grocer and naturalist" of Titus Street, Shipley.

John Gowen (c.1835-1905) was born in Yarmouth, Norfolk but worked in Harrogate. A "Naturalist (Animal and bird preserver)" he was a fish curer then a naturalist and latterly returned to fish curing. In White (1882): "Gowen, John, Bird Dealer, 21 Brook Street". In Kelly (1885): "Brook Street (West side), No. 20. Gowen, John, bird dealer". He died in Weymouth, Dorset.

John Grange (c.1849-1885) was born in Bishop Thornton, Yorkshire. In Kelly (1881)

under Bird & Animal Preservers: "Grange, John, North View, Chapel St. Harrogate". In the 1881 Census, as "Naturalist" of 2 Chapel Street, Harrogate. He provided information for Yorkshire faunal lists - Clarke & Roebuck (1881) (to which John Grange was a subscriber). Riley Fortune (1887) recollects John Grange shooting a pair of Hawfinch in the Spa Grounds at Harrogate. Not in Marshall.

John Lickley (c.1837-19??) was born in Leeds but lived in Ripon. A "Naturalist, animal preserver", he had also been a "Cordwainer" and hall keeper as "The Custodian of the Council Room" - appointed 2nd March 1882 on a salary of 6 guineas". Later became a shoe and boot maker. In Kelly (1881): "Lickley, John, 13 High Skellgate, Ripon", and under Bird & Animal Preservers: "Lickley, John, 23 Kirkgate, Ripon".

Jesse Millar/Miller/Milner (1811-1887) was born in Keighley, Yorkshire. He was a worsted Power Loom weaver who became a naturalist. Records exist with the surname varieties above. This was either due to transcription errors or possibly the fact that neither he nor his wife were able to write when they married in 1842. In Anon (1875b): "The party (of ramblers of Ovenden Naturalists' Society) were also invited to the house of J. Milner, to inspect his collection of moths and beetles, which was also a very good and interestring collection". Also "Keighley Naturalists' One Hundred years 1868-1968 by John Ogden". At Bradford, "most of our early taxidermy was from a local taxidermist, Jesse Miller; the majority were study skins rather than mounts" (Gerard McGowan to authors, 15 February 2017). He died in the town of his birth.

Francis Mitchell (see also under Merchants). Not in Marshall (2009).

Seth Lister Mosley (see also real 'Naturalists').

Alfred Roberts "stuffer" on census form and bird preserver (see also 'real Naturalists')

Joseph Thompson Storrs (c.1819-1884) was born in Doncaster. In the 1861 Census at 16 St. James Terrace, Doncaster, Yorkshire; he was a Baker and Confectioner before becoming a Bird & Animal Preservers at, 6 Silver St. Doncaster. Another address in the town is at Baker Street. Entry in Marshall from several sources. An archaeological dig in Doncaster in the 1960s re-development of the town centre discovered a Sea Eagle which turned out to be a specimen from Storrs' ex-premises (Howes to authors 5 February 2017 and Howes, 1989).

Edward Vickers Thompson (c.1835-?) was born in Kilnhurst, Yorkshire. He was a naturalist "stuffer" with an address in Scarborough. A fishmonger who turned naturalist but latterly returned to dealing in fish at Hartlepool and later at Great Yarmouth. See *The Naturalist* 69: 100.

Frederick Unwin (c.1828-?) was born and lived in Ripon, Yorkshire: Bird & Animal Preservers: Unwin, Frederick, 7 Middle St., Ripon.

Reuben Webster (c.1826-1885) was born in Brampton near Chesterfield but lived and worked at several addresses in Sheffield. In 1869 Reuben Webster was living at 67 Corporation Street, moving to Pinstone Street by 1874. He did high quality work and was well regarded as a taxidermist. Reuben Webster senior travelled with Henry Seebohm

through Norway in 1874. Father and son (latter also called Reuben, born in 1858 and died in 1900) were both taxidermists and another son named John Thomas (see below) was also involved. The family ran public houses in different parts of Sheffield, with wives probably in charge of victualling duties. They opened a shop called Neptune in Sheffield above the Museum Hotel in Orchard Street - given in the 1881 Census as 25 & 27 Orchard St. ('Neptune'), Sheffield: Reuben Webster, aged 55, a Naturalist employing 1 man (Bird Stuff.). Reuben Snr. was buried at Burngreave Cemetery. The collection of "Stuffed Birds, Animals and Reptiles" were offered at public auction on 20 June 1890.

Sheffield City Museum Committee Minutes for May 13, 1890 note the offer for sale "about 600 cases" of specimens preserved and mounted by Rueben Webster (Quoted in Riley & Riley, 1978). The Sheffield Public Museum bought the collection very cheaply because the executors were having problems selling his extensive stock. The Webster collection (Museums Sheffield) includes three Passenger Pigeons *Ectopistes migratorius*, two of which are currently on display at Weston Park Museum, Sheffield (Gina Allnatt to authors 15 February 2017). 106 cases were purchased for £106 in 1890.

In July 1882 (as reported in *The Sheffield & Rotherham Independent* of Saturday, July 29, 1882), "John Thomas Webster, son of Mr Webster landlord of the Museum Hotel and bird preserver, Orchard Street, was assaulted and in court prosecuting his attackers." "In February 1883 Reuben (Snr.) put on a display of his taxidermy at the Cutlers Hall." (*The Sheffield & Rotherham Independent*, Monday, February 12, 1883). Some years after the death of his father, Reuben junior moved to West Street and the collection at Sheffield, referred to above, is probably a combination of their work, possibly together with some by John Thomas Webster also (Alistair McLean to authors 22 February 2017).

John Thomas Webster (c.1855/6-1889) was born in Sheffield, Yorkshire. A "naturalist/ animal stuffer", son of Rueben (op.cit.). Address at 128 Rockingham Street.

Richard Wilding (c.1814-1889) was born in Longton, Lancashire and lived in Bowling, Bradford. He described himself as a "naturalist-scientific" (the Census enumerator added "Bird Preserver") but was a cotton weaver earlier and a hairdresser later [records examined have indicated that the hairdressing trade was common amongst taxidermists]. In *The Post Office Directory of Bradford, 1879/80*: "Wilding, Richard, Naturalist, 239 Manchester Road". Not in Marshall (2009).

Some of uncertain status:

Samuel Booth. (c.1867-?) was born in Eston, Yorkshire. Apprentice - probably a Naturalists' Apprentice but only for a brief period as later recorded as a Blast Furnace Labourer. Not in Marshall (2009).

David Burnard (c.1831-1896) was born in Wortley, Leeds. After being a steam crane worker he set up as a naturalist in Leeds. Not in Marshall (2009).

William Burinston (c.1839-?) was born, lived and worked in Bradford as "bird stuffer".

Thomas Hirst (c.1804–1881) was born in Ovenden, Yorkshire. A "naturalist" he worked in the wool industry as a weaver and wool comber. In Kelly (1881): "Hirst,

Thomas, 143 Horton Bank, Great Horton, Bradford. Not in Marshall (2009).

Conclusions

Ornithological interests have changed over time, comparative morphology has been left behind and we no longer see the "serried ranks" (Morris, 1993) of birds in museums. The sightings, study and behaviour of the living bird in its environment has become the predominant interest of today. However, for a time in the Victorian period, when taxidermy was at its height, commercial taxidermy flourished and dealers were finding a profitable occupation in being a 'Naturalist'.

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Colin Howes, formerly of Doncaster Museum & Art Gallery; Alistair McLean and Gina Allnatt, Sheffield City Museums; Gerard McGowan, Bradford Museums; Rebecca Machin, Leeds City Museum and Discovery Centre.

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Badger Bait-Marking – A population study to inform conservation management

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Introduction

The European Badger *Meles meles* is a nocturnal, semi-fossorial carnivorous mammal in the Mustelidae (weasel) family. It can grow up to around 70cm in length and can weigh up to 12kg. Although it is technically classed as a carnivore, due to the presence of an impressive set of canine teeth, it displays more omnivorous tendencies and will eat anything it can find, such as plant material, cereals, fruit, small mammals, birds and insects (Badger Trust, 2017). The primary and most favoured food is earthworms (typically *Lumbricus terrestris*), which generally make up over half of the diet (Clarke, 1994).

The Badger is also a very well protected species, above and beyond the Wildlife and Countryside Act 1981 – all thanks to a Yorkshireman. After years of campaigning, a local Yorkshire MP, the late Peter Hardy (Baron Hardy of Wath), managed to get his private member's bill through Parliament and the Badgers Act 1973 was passed, making the Badger the first land mammal in Britain to be given specific protection. This Act (along with some others) was consolidated and replaced by the Protection of Badgers Act 1993. However, this level of legal protection is not a result of the Badger being critically endangered; in fact it is listed on the IUCN list as of least concern (http://www.iucnredlist.org) and is estimated to have a current population (in England & Wales) of around 485,000 individuals (Judge *et al.*, 2017). It is actually afforded this level of protection in law as a result of historically very high levels of persecution. Thankfully, as a result of the combination of this protection and the availability of suitable farmland habitat, the abundance of setts in England has increased from the late 1980 levels of an estimated

31,500 to the recent estimates of 64,000 in 2013 - an increase of 103% (Judge *et al.,* 2014).

Of course, this increase does not come without challenges from a conservation land management perspective. As top predators, Badgers can have significant impacts on the habitats where they occur and so it is important to fully understand their distribution and use of any given site. This may be so that appropriate management can be undertaken and suitable decisions made which would either not adversely affect the Badger setts or prevent the implementation of a conservation strategy that would be unlikely to succeed with the presence of Badgers. Thankfully there is plenty of information available on Badgers. A study by Brooke *et al*. (2014) revealed the Badger to be the 5th most published species worldwide, only coming behind the Red Fox *Vulpes vulpes*, Wolf *Canis lupus*, Brown Bear *Ursus arctos* and Harbour Seal *Phoca vitulina* in terms of the number of published scientific papers. Perhaps surprisingly, it comes well ahead of some of the more famous carnivorous species such as the Lion *Panthera leo* and Tiger *Panthera tigris*. However, despite the availability of this wealth of information there is still a pressing need for more detailed and pertinent information, particularly in relation to local populations.

The 90ha study area addressed here forms a small part of a wider 220ha mosaic of wetland, carr woodland and grassland located in South Yorkshire. It is unusual, in the context of Badger populations, as it is on the edge of the known range in South Yorkshire, where the hilly undulating landscape of the coalfields to the West gives way to the vast flat plains of the Humberhead Levels in the East. This landscape is not naturally conducive to sustaining Badger populations due to an absence of suitable sites for the digging of setts which would not become flooded or waterlogged. However, being an ever resourceful and adaptable mammal has meant that, despite these challenges, Badgers seem to have found opportunities in this otherwise unsuitable landscape by utilising man-made flood banks, road and old railway embankments. Skinner *et al.* (1991) observed how man-made embankments were particularly important sett sites in low-lying Essex and this certainly seems to be the case in the study area (and the wider Humberhead Levels). A recent desk study by Howes (2015) showed that there was an apparent absence of setts covering the same area of this study in the 1980s (Figure 1). Today this is certainly not the case and a large amount of Badger activity is readily noticeable. This suggests that the present occupation is relatively recent and not a traditional established one, where setts can be hundreds of years old (Clarke, 1994). The Badgers at the study locality are certainly a dynamic and novel population whose further study is warranted – not only to improve our understanding of their behavioural ecology in an area not usually associated with the presence of Badgers but, more importantly, to understand and mitigate the potential impacts that a growing population of a top-level predator could present to an enclosed area of land managed for conservation.

In recent years, with the backdrop of various developments taking place all around the study area (Plate 1, centre pages), it was noted that Badger activity had been deemed to have increased substantially. Feeding signs, tracks and newly-dug setts appeared in areas previously absent of any such indications of Badger presence. A small population had been known in a small woodland copse to the south of the site, in an area which was now under development resulting in large scale habitat loss. It was suggested that the increase in activity was a direct result of this development displacing the Badger population from this area into the study area via one of the many culverts and small drainage underpasses of the adjacent motorway. As an

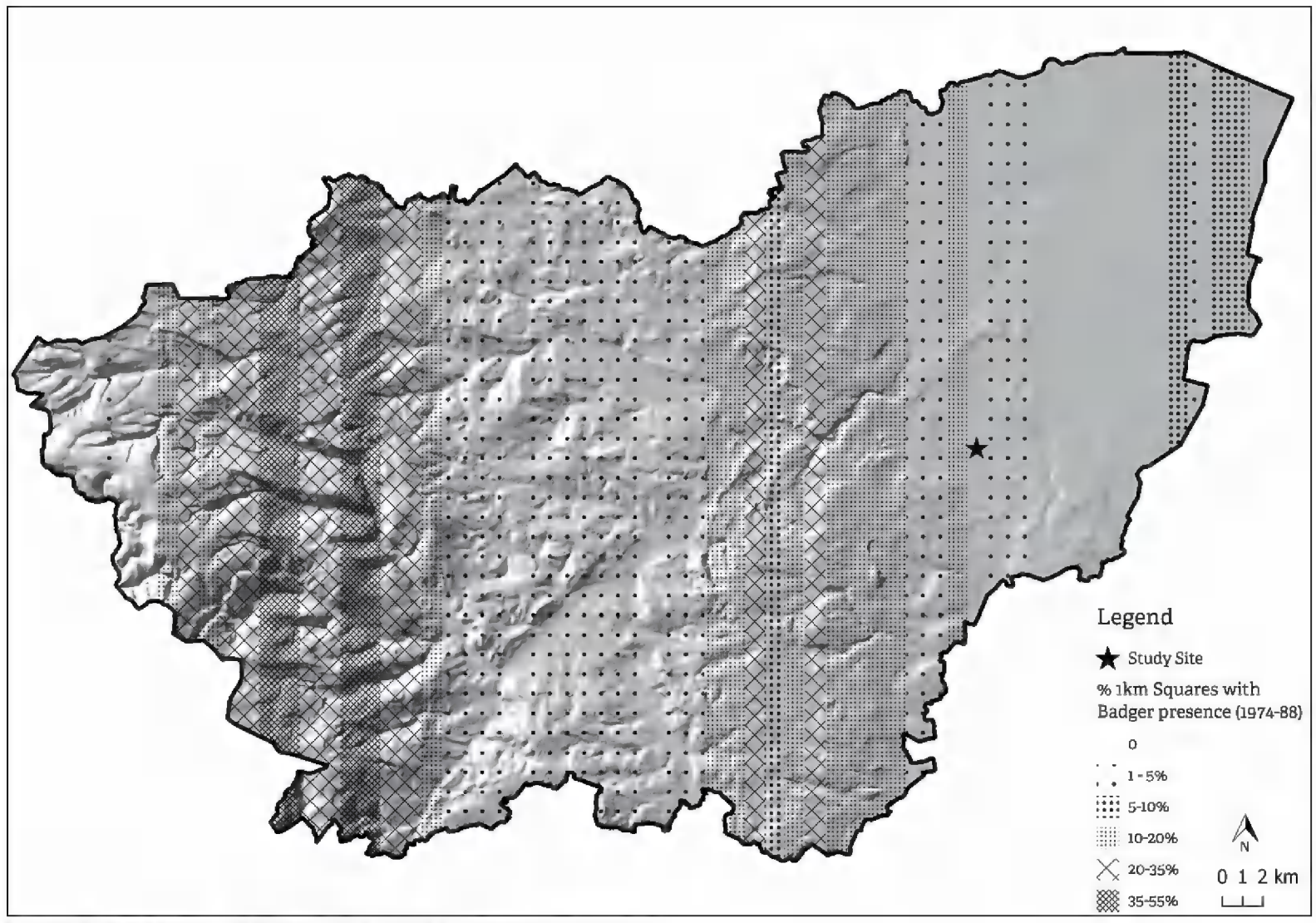

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Figure *1*: South Yorkshire Badger sett distribution between 1974 and 1988. Adapted from Howes (2015). The % scores represent the proportion of OS grid squares containing setts at each Easting in South Yorkshire.

initial population census had not previously been carried out on the Badger population within the study area it would be very difficult to substantiate this hypothesis, though previous surveys had found evidence of Badger activity in the culverts in the form of footprints. Nevertheless, it was decided that a bait-marking study would be a useful way to establish a baseline and enable an initial assessment of both the number of social groups on site as well as the territorial extents.

Methodology

Bait-marking surveys involve placing harmless coloured markers in food that the Badger will ingest and subsequently deposit in their dung. Such surveys are very effective due to the nature of territory marking exhibited by Badgers, whereby they mark the limits of the territory through a series of dung pits, collectively called latrine sites (Roper *et al.,* 1986; Scottish Natural Heritage, 2017). This makes the use of marked baits a particularly useful means for determining the extent of a Badger territory (Delahay *et al.,* 2000). The optimum time for undertaking Badger surveys is during Spring (February to April) when there is a peak of territorial activity and it is also a time when vegetation cover is at a minimum, which is important when trying to locate and identify signs of Badger activity. There is a second window of opportunity during the Autumn months (September to October) but the field signs are not as pronounced and less visible.

Before any marked bait could be placed it was first necessary to identify suitable sites by

undertaking an initial survey for field signs and setts. A preliminary walk-over survey was carried out during August 2015 with a team of volunteers. All signs of Badger evidence (potential setts, latrines, paths/runs, feeding signs, footprints and hair traces) were recorded and mapped using a Global Positioning System (GPS - Garmin Etrex10). From these data it was possible to readily identify clusters of setts/holes (that were within 50m of each other) and setts were classified according to categories which were originally set out by Dr Penny Thornton during her PhD at Exeter University (Table 1). The recording of active latrine sites was equally as important in identifying where to monitor for the appearance of the coloured bait marker pellets.

Table 1: Sett categories

Sett category	Description
Main sett	Many holes (both used and disused), large spoil heaps and well-worn paths. Only one main sett per clan.
Annex sett	Several holes (may also be well-used) with visible paths to the main sett, which is around 50 to 150m away.
Subsidiary sett	Few holes. Some entrances may connect to the main sett by obvious paths - but not always.
Outlier sett	One or two entrance holes and no well-defined path to the main sett. Used infrequently.

Marked baits were made up by mixing commercially available peanuts (donated from the local B&Q distribution warehouse), which are irresistible to and much enjoyed by Badgers, and the coloured marker pellets (which are readily available from ecological survey suppliers NHBS, www.nhbs.com) at a ratio of 10:1. The pellets were bound together with the peanuts using golden syrup (Plate 2, centre pages). At each active sett site the marked baits were placed under logs and stones (to avoid the bait being taken by non-target species), taking care to avoid getting too close to the entrances of the setts. Once placed, the Badgers quickly located and ingested the marked bait during the following evening's foraging, as evidenced by footage from covert trail cameras placed at the baiting sites (Plate 2, centre pages). Studies have shown the transit time of marked baits through the gut to be no more than 24 hours and so bait marking can reveal the daily latrine use of Badgers from each of the marked setts (Kilshaw *et al.*, 2009). This also means that it was necessary to carry out the intensive placement of baits and follow up latrine monitoring surveys for several weeks to ensure that there was plenty of opportunity for multiple Badgers to ingest all of the marked bait at each sett site and also give time for all of the active latrine sites to be visited by multiple individuals following the ingestion of the bait.

Following the placement of baits it was important to survey the previously identified latrine sites to look out for the appearance of any colour markers within the dung pits. When markers were present a note of the colour(s) present within a single dung pit were made. The data were then mapped in open source Geographical Information System (GIS) software (QGIS, http://www.qgis.org) to allow spatial relationships and distributions to be interrogated more effectively, which in turn allowed the grouping of setts into potential social groups based on the presence or absence of mixed colour markers within and between latrine sites.

During the first 2015 survey, bait marking took place over a period of four weeks from September to the beginning of October, with baits being placed out every other day (to prolong the length

of survey and make the most of the limited bait resource we had available). The final search for marked dung pits at latrine sites was carried out on 20 October 2015.

A second repeat survey was carried out in the preferred Spring season of 2017, to collect data on any changes in the distributions of territory boundaries. This followed a period of extensive habitat creation and changes to the habitat management after the 2015 survey, with a large (40ha) area of arable land being reverted into fen/grassland and scrapes. An initial walk-over survey was carried out on 22 March 2017 followed by the bait marking, with baits being placed out almost every day. This led to a shorter overall survey length in comparison to the 2015 survey, with all the baits having been placed after two weeks and the last bait being placed on 7 April 2017. The follow-up survey of the known latrine sites, looking for signs of marker pellets over the subsequent couple of weeks, took place with all survey work coming to an end by 21 April 2017.

Results

A total of 38 holes/entrances were found during the 2015 survey, some active and some disused. This led to the identification of five main areas of potential sett sites and therefore five areas in which to place the colour marked baits (red, blue, purple, yellow, and orange). A further three new entrances were discovered during the 2017 surveys bringing the total number in the study area to 41. It was necessary to add a 6th colour marker (green) for the extra potential sett. For consistency, the same marker colours were used at the same locations during both surveys.

In total there were 216 dung pits found during the initial survey in 2015. These were revisited on a daily basis and, by the end of the survey, a total of 71 (33%) had colour markers present and, furthermore, 15 of these contained more than one marker colour. During 2017 a total of 140 dung pits were identified, 76 fewer than in 2015. This could be attributed to the increased difficulties in accessing parts of the study area, which had become flooded following habitat creation works. 45 of the 140 dung pits (32%) were found to contain colour markers, with 11 of these containing more than one marker colour.

Discussion

The results from 2015 and 2017 both seemed to confirm the presence of two discrete Badger clans in the study area (Plate 3, centre pages). The identification of more than one group could suggest a potential new group moving onto the site, possibly as a result of the surrounding developments. This has potential implications on the site as little is known about the current carrying capacity of the site and whether it could sustainably host two large Badger populations. Certainly the increased competition for food and feeding grounds could give rise to the likelihood of increased pressure on other animals as the Badgers seek out additional food resources to support their numbers.

Over the two surveys there was no real change or shift in territory size, despite changes in land management. The discovery of several new Badger holes in the 2017 survey did suggest a slight change in how existing territorial ranges were utilised, possibly as a result of the Badger population adjusting to the newly-created habitats and increased water levels on site. In both surveys the red, purple and blue bait-marked setts showed a large degree of mixing, with the coloured pellets being found in dung pits at latrine sites near all three of the setts - with some of these dung pits showing individual droppings with multiple colours (Plate 2, centre page),

confirming that certain individual badgers had visited, and fed at, multiple marked setts in one evening.

The yellow bait-marked sett showed a distinct separation (from the red, blue and purple setts) across both surveys. The addition of green bait-marking pellets at a newly active sett during the 2017 survey revealed that the Badgers in this area were associated with the yellow sett, with the green pellets being found in dung pits at latrine sites alongside yellow markers too (and as far as 600m from the marker location).

The territorial boundary between the two apparent Badger populations present in the study area has not shifted between 2015 and 2017, but the location of the most active boundary latrine has moved from close to the red sett to a hugely active site (60+ latrines) in a woodland plantation adjacent to prime feeding habitat. A smaller boundary latrine was found to the North West corner of the study area but the lack of suitable feeding habitat in this area is probably why it was not a hugely active latrine site. It may be that the shift of the main territorial boundary is a result of newly installed fencing, as part of the new habitat creation scheme, acting as a barrier between the two groups. The large latrine site on the edge of the plantation suggests just how important the feeding grounds in this area are to both groups, as Badgers have been shown to have a tendency to create latrines most frequently on the boundary closest to their current feeding site (Stewart *et al.,* 2001). This can be seen on the map of latrines (Plate 3, centre pages). This needs to be taken into account when planning habitat creation in this area, which was originally aimed to provide suitable ground-nesting bird habitat. In light of the evidence of Badger activity in this area different management strategies need to be considered, such as the installation of Badger fencing; allowing for larger sward height to discourage Badgers; or a rethink on what the target species should be for this new habitat, as ground-nesting birds may never colonise this area due to disturbance and predation risks without some form of mitigation being put in place.

Bedding was seen around the entrance of a newly-dug sett at the purple marked sett, suggesting it was now being used more frequently since 2015. On 13 May, at around 3pm, two young Badgers were observed playing outside close to this sett, potentially providing confirmation that this previous 'outlier' sett had been used to rear young for a first time in 2017, and thereby becoming promoted to an active annex sett. This behaviour has been seen at other setts with Clarke (1994) suggesting that in larger social groups a less dominant sow will give birth and rear her young away from the main sett, presumably to avoid conflict with the dominant sow and thus improve her own cubs' chances of survival. This suggests that the red/blue/purple social group is relatively large with a minimum of two females having had young in this group alone during 2017.

As well as the presence of young out of their burrows during the day, a newly excavated hole was discovered directly alongside a main path near the entrance to the site. This, coupled with the increased visible activity (feeding signs and latrines), has meant that Badger activity on site has become very obvious, with even the most casual of visitors now being aware of the presence of Badgers on site. This poses some potential problems, as not only do the Badgers cause disturbance and minor damage to pathways, but their more widely-known presence could lead to undesirable antisocial behaviours on site. However, some studies have suggested that public awareness may be beneficial to Badger protection (Jenkinson & Wheater, 1998) as

undesirable characters would be unlikely to risk being caught disturbing a Badger sett on a site well known to members of the public.

Some considerations that should be made following this study are that the new fen/grassland habitat, which is managed by grazing with cattle and sheep, may give rise to conflict with the grazier should their stock in this area develop signs of bovine TB. Likewise there is an equal risk that the cattle could introduce TB to the badgers. A final observation is that the territorial limits of one group comes close to some known breeding sites of Schedule 1 bird species. Although there is no suggestion at the moment that the Badgers have had any impact on the breeding success of these birds it is possible that in future, should food become scarce during periods of drought or as a result of increased population size, it could force the Badgers into conflict with the birds. This needs to be carefully monitored and appropriate mitigation put in place, if necessary, to prevent this from taking place.

Areas of further study will be to look at the seasonal variation in diet of the Badgers on site. Anecdotal observations from the dung pits during this study suggest that the main diet of the Badgers at present is invertebrates, but only a detailed analysis of the dung could confirm this.

Finally, although there are management considerations resulting from the challenges posed by the sudden increase in Badger activity, overall it is heartening to see a species which was once so heavily persecuted doing so well on this site and hopefully that will continue for many years to come.

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Additions and corrections to the Yorkshire Diptera list (part 7): including two species of *Trichocera* [Diptera: Trichoceridae] new to the British list

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Introduction

This latest batch of additions and corrections to the Yorkshire Diptera list includes two winter gnats (family Trichoceridae) which are new to the British list, *viz*. *Trichocera* (*Saltrichocera*) *brevis* Krzemińska, 2002 and *T.* (*S.*) *implicata* Dahl, 1976. These were recorded by Julian Small from his static Rothamsted Trap no. 644 situated at Wheldrake in VC61.

Julian (pers. comm.) is working on a new key to *Trichocera* and, in addition to the aforementioned new species from Wheldrake, his investigations of British *Trichocera* have produced two other species which will be new to the British list once they have been formally added via publication. The national fauna of *Trichocera* will then stand at thirteen species, of which four will be as a result of Julian's excellent recent work on this relatively neglected genus. In due course there will be a further addition to the Yorkshire list from Wheldrake, as one *Trichocera* species captured there is awaiting description as new to science by Julian.

The majority of Yorkshire Diptera additions made in the current paper are due to John Coldwell's excellent work on many neglected and obscure Diptera families in the Barnsley area of VC63. John's recent work at Scout Dike (SE2204) also produced five further additions to the county list, which were enumerated in Coldwell (2016).

It is pleasing to report increasing interest in the county's Diptera fauna over recent years. Indeed, the overall quantity of records received and correspondence with those showing an interest in Diptera has been far too much for me to keep pace with.

Barry Warrington's lists of Agromyzidae recorded during 2015 and 2016, mainly from the Hull

area in VC61, included a number of new vice-county records and four additions to the county list, which were enumerated in an excellent short paper (Warrington, 2017). Barry (pers. comm.), has confirmed several more additions to the Yorkshire list of this family from his recent work, for which he has included all details elsewhere in this issue (see p31). This relatively-underworked family has provided many county additions during recent years. The previous paper in this series (Grayson, 2015) principally featured additions made by Bill Ely, whereas all agromyzid additions made in the current paper are due to John Coldwell.

VC65 remains relatively under-recorded for many Diptera families; therefore, a list of Diptera recorded during 2016 at Hutton Conyers (SE323733) by Charlie Fletcher was very welcome. It provided the following additions to the VC65 list: Syrphidae; *Chrysotoxum bicinctum* (Linnaeus, 1758), *Neoascia obliqua* Coe, 1940: Tephritidae; *Anomoia purmunda* (Harris, [1780]), *Tephritis cometa* (Loew, 1840), *T. formosa* (Loew, 1844): Agromyzidae; *Agromyza anthracina* Meigen, 1830, *Amauromyza* (*Cephalomyza*) *labiatarum* (Hendel, 1920), *Aulagromyza tremulae* (Hering, 1957), *Chromatomyia aprilina* (Goureau, 1851), *Liriomyza amoena* (Meigen, 1830), *L. congesta* (Becker, 1903), *Phytomyza calthophila* Hendel, 1931, *P. chaerophylli* Kaltenbach, 1856, *P. minuscula* Goureau, 1851 and *P. spondylii* Robineau-Desvoidy, 1851. The Yorkshire records for the last-mentioned species will require future reassessment, as Barry Warrington reports that *P. spondylii* can only be determined with certainty via examination of the male genitalia.

Ian Andrews' Diptera studies during recent years, particularly on such families as Sarcophagidae and Tachinidae, have produced numerous vice-county additions, particularly to VC61, plus a good number of county additions, of which seven are divulged in the current paper.

Roy Crossley has produced a varied series of superb Diptera papers in the current journal over many years; these include Crossley (2015), which added *Hydromyza livens* (Fabricius, 1794) [Scathophagidae] to the county list in wonderfully-detailed fashion.

Others who have also recently forwarded lists of Yorkshire Diptera records or have included records or photographs in correspondence include: Pat Bone, Gavin Boyd, Jon Capel, Joan Childs, Bill Ely, Tom Higginbottom, Peter Kendall, Helen Kirk, Jim Middleton, Terry Whitaker and Richard Wilson.

Additions and re-instatements to the Yorkshire Diptera list

In the list below, and the list of exclusions, a full surname is given when a person is mentioned once only. Otherwise, the recorders etc. are abbreviated to initials as thus: Ian Andrews (IJA), John Coldwell (JDC), Roy Crossley (RC), David Gibbs (DJG), Andrew Grayson (AG), Julian Small (JOHS), Peter Skidmore (PS) and Barry Warrington (BPW).

Throughout the following lists, National Grid references etc. have been omitted in instances where localities are mentioned multiple times. The relevant references etc. for such localities are thus: Carlton Marsh (SE3709); Clough Wood, Gunthwaite (SE2406); Dodworth, garden (SE311054); all other Dodworth habitats (SE3105); Elsecar Colliery (SE3900); Little Houghton (SE4205); Old Moor (SE4202); Rabbit Ings (SE3711); Stainborough Castle gardens (SE3103); Wheldrake Rothamsted Trap no. 644 (SE69104475); Winscar Reservoir, pine plantation only (SE1503).

MYCETOPHILIDAE

Greenomyia mongolica Laštovka & Matile, 1974: VC61: Wheldrake Rothamsted Trap 03.10.2017 (♂) JOHS.

Sciophila interrupta (Winnertz, 1863): VC63: Bretton Lakes, south side of lower lake (SE2812) 27.09.2014 (♂) JDC. This is a nationally scarce fungus gnat. It was allocated RDB1 – Endangered status in Falk (1991) since downgraded to Lower Risk (Nationally Scarce) status in Falk & Chandler (2005) which divulged a mere thirteen British sites, one being in South Wales and the others in southern and eastern England.

TRICHOCERIDAE

Trichocera (Saltrichocera) brevis Krzemińska, 2002: **NEW TO BRITAIN**: VC61: Wheldrake Rothamsted Trap 02.02.2014 (2♀), 17.02.2014 (♀), 21.02.2014 (♀) JOHS. This winter gnat is very similar to *T.* (*S.*) *saltator* (Harris, 1776), from which it may be distinguished via the following abstract from Krzemińska (2002): "differs in short ovipositor, not exceeding 1.3 times the genital segment (in *T. saltator*: 1.3-1.6) and antennae. Flagellomeres 1-4 in males and 1-6 or more in females are short, oval, with scarce, short pubescence, with 1-2 erect bristles (in *T. saltator* only first 1-3 are oval; the subsequent ones become elongated and cylindrical; pubescence is dense, soft, and bristles not erect)."

T. (S.) implicata Dahl, 1976: **NEW TO BRITAIN**: VC61: Wheldrake Rothamsted Trap 12.12.2013 (♀), 25.12.2013 (♀) JOHS. This was described by Dahl (1976) and re-described by Starý & Martinovský (1996). It is now confirmed from Britain on the basis of these Wheldrake records. These are not the first British specimens to be identified as *T.* (*S.*) *implicata*, but it has not previously been added to the British list due to taxonomic confusion surrounding *T.* (*S.*) *implicata* and *T.* (*S.*) *japonica* Matsumura, 1915 (JOHS, pers. comm.).

T. (S.) rufulenta Edwards, 1938: VC61: Wheldrake Rothamsted Trap 06.12.2013 (♀), 07.12.2013 (♀), 22.01.2014 (♂), 30.01.2014 (♂), 04.02.2014 (♂) JOHS.

CULICIDAE

Aedes (Aedes) cinereus Meigen, 1818: VC63: Middle Moor Tram, Thorne Moors (SE734155) 17.07.2015 (♂) JOHS.

Anopheles (Anopheles) algeriensis Theobald, 1903: VC61: Wheldrake Rothamsted Trap 23.09.2015 (♂ genitalia examined) JOHS.

Ochlerotatus (Ochlerotatus) flavescens (Müller, 1764): VC61: ARCO National Distribution Centre, Priory Park, Hull (TA05482644) 02.08.2016 (♀) AG. This nationally rare mosquito [categorized as RDB2 in Falk (1991) and Data Deficient in Falk & Chandler (2005)] was found beside a pond set within scrub woodland dominated by Hawthorn *Crataegus monogyna*. This pond and woodland are no longer extant due to clearance and levelling in preparation for redevelopment; however, *O.* (*O.*) *flavescens* may still occur at the ARCO site as another pond was retained and extended as part of the redevelopment plan. The occurrence of this mosquito on the Yorkshire side of the Humber Estuary was not entirely unexpected as it was stated by Service & Smith (1972) to be found in abundance on the Lincolnshire side at Barton-on-Humber. *O.* (*O.*) *flavescens* was previously excluded from the Yorkshire list by Grayson (2009). This exclusion related to an indeterminable worn and damaged specimen in Leeds Museum Discovery Centre which was filed under *O.* (*O.*) *flavescens*, but may have been misplaced. It was collected by Chris Cheetham at Ainderby on 22.06.1946 but no record was ever published. Regardless, *O.* (*O.*) *flavescens* is principally a mosquito of coastal regions and is very unlikely to occur as far inland as Ainderby.

CHIRONOMIDAE

Benthalia carbonarius (Meigen, 1804): VC63: Old Moor, marginal vegetation and ponds 28.05.2016 (2♂) JDC.

Larsia atrocincta (Goetghebuer, 1942): VC61: Wheldrake Rothamsted Trap 09.06.2013 (3♂) JOHS.
Metriocnemus atriclavus Kieffer, 1921: VC63: Dodworth, waste ground 01.05.2015 (♂) JDC.
Tanytarsus lugens (Kieffer in Thienemann & Kieffer, 1916): VC63: Ingbirchworth, reservoir wall (SE2105) 30.04.2016 (2♂) JDC.

DOLICHOPODIDAE
Medetera excellens Frey, 1909: VC64: Timble Ings (SE1553) 15.07.1986 (2♀) RC. This is a re-instatement to the Yorkshire list. This record was formerly discounted by RC (Grayson, 2006a) but is now regarded as a good record following recent re-examination of an extant specimen (RC, pers. comm.).

PLATYPEZIDAE
Agathomyia cinerea (Zetterstedt, 1852): VC63: Winscar Reservoir, pine plantation 26.09.2015 (2♀ taken by sweeping around ferns/fungi) JDC.

PHORIDAE
Borophaga femorata (Meigen, 1830): VC63: Clough Wood, Gunthwaite 13.05.2017 (♂ swept from damp woodland) JDC.
Spiniphora dorsalis (Becker, 1901): VC63: Potter Holes Plantation, secondary woodland (SK3499) 21.10.2016 (♂) JDC.

LONCHOPTERIDAE
Lonchoptera meijerei Collin, 1938: VC64: East Keswick Fitts on the River Wharfe just upstream from Wetherby (SE35224585) 12.06.2017 (♂ & ♀) JOHS. This pointed-winged fly was also recorded from East Keswick Fitts in 2009 by Andy Godfrey (JOHS, pers. comm.).

SYRPHIDAE
Epistrophe diaphana (Zetterstedt, 1843): VC61: North Cave Wetlands (SE883330) 29.05.2017 (♀) RC.

PIPUNCULIDAE
Cephalops* (*Semicephalops*) *penultimus Ackland, 1993. This big-headed fly was excluded by Grayson (2006a) as it was included in error on an unpublished list. Subsequently, it was realised that *C.* (*S.*) *penultimus* should be restored to the Yorkshire list as it was recorded from Thorne Moors in VC63 in Ackland (1993); furthermore, JDC found a number of specimens of both sexes (1♂ dissected) on 02.07.2015 at Gypsy Marsh (SE4102), which is also in VC63.
Chalarus decorus Jervis, 1992: VC63: Winscar Reservoir, pine plantation 24.06.2015 (♀), both sexes subsequently found in good numbers JDC.
C. indistinctus Jervis, 1992: VC63: Dodworth, waste ground near business park 06.05.2014 (♂ dissected) JDC; Clough Wood, Gunthwaite 06.06.2015 (♂ dissected) JDC; Stainborough Castle gardens 10.06.2015 (♂ dissected) JDC.
C. juliae Jervis, 1992: VC63: Stainborough Castle gardens 05.07.2015 (♂ dissected), both sexes found subsequently JDC.
Dorylomorpha* (*Dorylomyza*) *fennica Albrecht, 1979: VC63: Dodworth 21.05.2014 (♂) JDC; Haigh (SE3011) 17.06.2013 (♂) JDC (*teste* DJG); Little Houghton 02.06.2014 (♂) JDC.
Pipunculus oldenbergi Collin, 1956: VC63: Carlton Marsh, rough scrub and pond edge 06.07.2016 (♀) JDC (*teste* DJG); Grimethorpe, reclaimed colliery spoil tip, rough grassland (SE4106) 26.07.2016 (♀) JDC (*teste* DJG).

TEPHRITIDAE

Tephritis matricariae (Loew, 1844): VC61: Allerthorpe Common (SE75804806) 22.03.2016 (2♀) IJA; VC63: Elsecar Colliery, open mosaic 09.07.2015 (2♀), 13.07.2016 (♀) JDC.

SEPSIDAE

Themira nigricornis (Meigen, 1826) [= *fallenii* (Staeger in Schiødte, 1844)]: VC61: Millington (SE841529) ex Roe Deer *Capreolus capreolus* corpse, 10.04.2017 (♀), 19.04.2017 (circa 20, both sexes), 23.04.2017 (more than 100 individuals) IJA (*teste* S. Crellin). At 10.04.2017, the deer had been dead for eight days (IJA, pers. comm.). This is a re-instatement to the Yorkshire list, as the record in Grimshaw (1907) was discounted in detail by Grayson (2014).

AGROMYZIDAE

Agromyza erythrocephala Hendel, 1920: VC63: Dodworth 21.05.2013 (♀). This is a rare fly which causes galls on Tufted Vetch *Vicia cracca* (JDC, pers. comm.).

A. felleri Hering, 1941: VC63: Dodworth, edge of tip 23.04.2014 (♂) JDC.

A. hendeli Griffiths, 1963: VC63: Old Moor, marginal vegetation/ponds 06.06.2016 (♂) JDC; Rabbit Ings 20.08.2013 (♂) JDC.

A. johannae de Meijere, 1924: VC63: Dodworth 02.05.2013 (2♀) JDC; Rabbit Ings, wet scrub 15.04.2015 (♂) JDC.

Amauromyza (Cephalomyza) monfalconensis (Strobl, 1909): VC63: Dodworth 15.06.2013 (♂), 24.06.2013 (♂) JDC; Old Moor 01.06.2013 (♂) JDC.

Cerodontha (Dizygomyza) crassiseta (Strobl, 1900): VC63: Bolton Ings, edge of reed-bed (SE4302) 12.05.2016 (2♂ & ♀) JDC; Dodworth, waste ground near business park 24.08.2015 (♂) JDC.

C. (D.) fasciata (Strobl, 1880): VC63: Carlton Marsh, rough meadow 15.05.2014 (♂) JDC. This is a rare species in Britain (JDC, pers. comm.).

Chromatomyia fuscula (Zetterstedt, 1838): VC63: Dodworth 23.04.2013 (2♂ swept from waste ground) JDC. This leaf-mining fly mines grasses. It is apparently rare in the UK but is probably overlooked (JDC, pers. comm.).

Melanagromyza angeliciphaga Spencer, 1969: VC63: Denaby Ings (SE5001) 1969 (2♀ & 4 puparia) leg. PS, det. BPW in 2017. These specimens are in Doncaster Museum and Art Gallery. The adults emerged on 28.05.1969 from pupae found by PS in the stems of Hogweed *Heracleum sphondylium* on 12.04.1969. They were originally det. by PS as *M. lappae* (Loew, 1850) and published in Skidmore (1970). See notes given later in this paper under *M. lappae*.

M. oligophaga Spencer, 1990: VC63: Dodworth, waste ground 09.06.2016 (♂) JDC; Rabbit Ings, waste ground 24.05.2016 (♂) JDC.

Ophiomyia curvipalpis (Zetterstedt, 1848): VC63: Dodworth, rough grassland 09.05.2016 (♀) JDC.

Phytobia errans (Meigen, 1830): VC63: Barrow Colliery, rough grassland (SE3503) 21.07.2015 (♀) JDC; Carlton Marsh, rough scrub and pond edge 06.07.2016 (♀) JDC; Elsecar Colliery, mosaic open ground 30.06.2015 (♂) JDC. This insect was provisionally excluded from the Yorkshire list by Grayson (2014).

Phytomyza krygeri Hering, 1949: VC63: Stainborough Castle gardens 12.06.2013 (♂), 10.06.2015 (♂) JDC.

P. ranunculicola Hering, 1949: VC63: Dodworth 27.05.2013 (♂) JDC. This was a fairly recent addition to the British list at the time it was recorded by JDC.

CHLOROPIDAE

Lasiambia baliola (Collin, 1946): VC63: New Park Spring (SE4107) 10.08.2017 (♀) JDC; Scout Dike, fringing vegetation/sallow (SE2204) 04.08.2014 (♂) JDC.

TRIXOSCELIDIDAE
Trixoscelis similis Hackman, 1970: VC63: Dodworth, garden 18.05.2017, 20.05.2017, both sexes taken by sweeping Hawthorn *Crataegus monogyna* at the bottom of the garden, JDC.

DROSOPHILIDAE
Drosophila* (*Sophophora*) *suzukii (Matsumura, 1931): VC61: Hessle Cemetery (TA031265) 13.01.2017 (♂ & 2♀ beaten from Lawson's Cypress *Chamaecyparis lawsoniana*) BPW; Wheldrake Rothamsted Trap, ♂ in late autumn 2015, then both sexes quite abundant [up to 20 or more] in the trap on mild nights during October and November in 2016 and 2017 JOHS.

EPHYDRIDAE
Parydra* (*Paranapea*) *pubera Loew, 1860: VC63: Low Barugh, marsh/seepage (SE3208) 17.08.2016 (♂) JDC.
Pelina aenescens (Stenhammar, 1844): VC63: Fox Clough, moorland edge/rough pasture (SE1800) 23.07.2016 (♀) JDC.

SCATHOPHAGIDAE
Cordilura* (*Cordilura*) *picipes Meigen, 1826 [= *biseta* Loew, 1864]: VC61: East Cottingwith Ings, (SE6941) 10.05.2015 (♀) RC. An earlier unpublished record from Adel Dam sub nom. *biseta* was discounted by Grayson (2006b).
Nanna multisetosa (Hackman, 1956): VC61: Hagg Wood, Dunnington (SE6852) 02.05.2015 (♂) RC.

ANTHOMYIIDAE
Botanophila dissecta (Meigen, 1826): VC63: Little Houghton, rough grassland 06.06.2014 (♂) JDC. This is the first confirmed Yorkshire record. Grayson (2014) alluded to a tentative record.
B. lobata (Collin, 1967): VC63: Little Houghton, rough grassland 02.06.2014 (♂) JDC (*teste* D.M. Ackland). This is the first confirmed Yorkshire record. A record in Ackland (2013) was erroneous and referred to a specimen of the closely-related *B. laterella* (Collin, 1967) with damaged genitalia (JDC, pers. comm.).
B. sericea (Malloch, 1920) [= *obscura* (Zetterstedt, 1845), preocc. = *rutilifrons* (Ringdahl, 1926)]: VC63: Fox Clough (SE1801) 22.06.2010 (♂) JDC; Winscar Reservoir (SE1502) 17.07.2010 (♂) JDC; VC64: Malham Tarn, sweeping edge of tarn (SD8966) 07.1972, Mrs. E.C. Broadhead, det. V. Michelsen in 1983 [specimen in Leeds Museum Discovery Centre cabinet no. 31]; VC65: High Force (NY8828) 20-25.06.1981, R.H.L. Disney, det. PS.
Pegomya steini Hendel, 1925: VC61: Hessle (SE017261) 10.06.2017 (leaf-mine on thistle *Cirsium*) BPW.

FANNIIDAE
Fannia melania (Dufour, 1839): VC63: Carlton Marsh, rough scrub and pond edge 06.07.2016 (♂) JDC.
F. metallipennis (Zetterstedt, [1838]): VC63: Dodworth, garden 11.05.2017 (♂) JDC. This fly was provisionally excluded from the Yorkshire list by Grayson (2014).

MUSCIDAE
Hydrotaea nidicola Malloch, 1925: VC63: Kiveton Park (SK5082) 20.05.2004 (♀) W.A. Ely, det. W.A. Ely in 2017.

CALLIPHORIDAE
Angioneura cyrtoneurina (Zetterstedt, 1859): VC61: Millington (SE841529) 27.08.2015 (♂) IJA.

SARCOPHAGIDAE
Ravinia pernix (Harris, [1780]): VC61: Allerthorpe Common (SE75244776) 29.07.2017 (♂) IJA.
Sarcophaga* (*Helicophagella*) *agnata Rondani, 1860: VC61: Humberside Lane, Welwick (TA33861930) 10.09.2015 (♂) AG.
S.* (*H.*) *rosellei Böttcher, 1912: VC61: Bielby (SE785442) 30.08.2015 (♂) IJA; Calley Heath (SE751497) 10.05.2015 (♂) IJA; Thornton (SE759444) 23.04.2014 (♂) IJA; VC62: Dalby Forest (SE896914) 17.08.2015 (♂) IJA; VC63: Carlton Marsh 03.04.2017 (♂ swept from rough grassland) JDC.
S.* (*Rosellea*) *aratrix Pandellé, 1896: VC62: Seive Dale Fen (SE854880) 12.07.2017 (♂) IJA.

TACHINIDAE
Drino lota (Meigen, 1824): VC61: Allerthorpe Common (SE75304751) 14.07.2015 (♀) IJA.
Phryno vetula (Meigen, 1824): VC63: Clough Wood, Gunthwaite 04.05.2015 (♀) JDC.
Phytomyptera nigrina (Meigen, 1824): VC61: Allerthorpe Common (SE76104742) 14.07.2015 (♀) IJA.

Exclusions from the Yorkshire Diptera list
CECIDOMYIIDAE
Dasineura papaveris (Winnertz, 1853) [sub nom. *Perrisia papaveris*], ***Mayetiola dactylidis*** Kieffer, 1896 and ***M. moliniae*** (Rübsaamen, 1895) were included by Falconer (1922) in his annotated list of *Plant Galls of East Yorkshire*, which formed part of a *Handbook to Hull and the East Riding of Yorkshire*. The handbook was prepared for members of the British Association for the Advancement of Science [now the British Science Association] when they visited Hull in September 1922. Due to a paucity of gall records from the regions to be visited, Falconer (1922) apparently decided the best course of action was to prepare a list of galls which he considered might occur in the Hull to York areas during September. The list therefore includes many galls without any locality data, including the three above, all of which were probably not recorded from Yorkshire at the time and have not been subsequently reported from the county.

SCIOMYZIDAE
Pherbellia* (*Chetocera*) *sordida (Hendel, 1902). A record in Coldwell (2011) was in error for *P.* (*C.*) *griseola* (Fallén, 1820) (JDC, pers. comm.).

AGROMYZIDAE
Melanagromyza lappae (Loew, 1850). BPW (pers. comm.) had doubts about the authenticity of the only Yorkshire record of *M. lappae* (Skidmore, 1970) based upon the host plant from which the pupae were collected (Hogweed *Heracleum sphondylium*). Upon re-examination by BPW, the material in Doncaster Museum and Art Gallery was found to be *M. angeliciphaga* Spencer, 1969, which is a known miner of Hogweed [see notes given earlier in this paper under *M. angeliciphaga*]. When preparing Skidmore (1970), PS would not have been aware of the almost-simultaneous publication of *M. angeliciphaga* as new to science.

Further notes
MUSCIDAE
The true ***Spilogona litorea*** (Fallén, 1823) has not been recorded from Yorkshire, as the Yorkshire records of *S. litorea* refer to ***S. falleni*** Pont, 1984 [= *litorea* sensu auctt., nec (Fallén, 1823)]; therefore, the reference to *S. litorea* on line 4317 of the Second Version of *A Simplified Provisional List of Yorkshire Diptera* [available via the YNU's web-site] should be amended to *S. falleni*.

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Leaf-mining flies (Agromyzidae) new to the Yorkshire Diptera list

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Introduction

During 2017, 17 species of Agromyzidae were added to the Yorkshire list. Most were caught by sweeping adult material, three species were reared from collected leaf-mines and one was identified based on the larval leaf-mine. Thirteen leaf-mining flies were recorded in East Yorkshire (VC61) and three from South Yorkshire (VC63). The majority of additions were recorded by the author (BPW) with three records coming from John Coldwell (JDC) and single additions from Bill Dolling (WRD) and Charlie Fletcher (CHF).

Agromyza phragmitidis Hendel 1922

Single males were collected on 28.vii.2017 and 12.viii.2017 on Hessle foreshore (VC61) by BPW; a known miner of Common Reed *Phragmites australis*, which is abundant in the locality.

Agromyza varicornis Strobl 1898

Stem mines on *Lathyrus* were collected in August 2017 by BPW with adults emerging as follows: 20.viii.2017 (1♂), 21.ix.2017 (1♀), 22.ix.2017 (1♀) and 28.ix.2017 (1♂), Hull (VC61); a widespread leaf-miner which attacks garden peas.

Amauromyza luteiceps Hendel 1920

A single male was collected on 17.vii.2017 on Hessle foreshore (VC61) by BPW; a rather rare fly with only 13 records nationally. This represents the most northerly known record to date (Thetford TL8173 was previously the most northerly record). A fly which is believed to be a stem-borer of *Atriplex*. The genitalia can be seen in Plate 4, centre pages.

Aulagromyza anteposita Strobl 1898

Adult males were collected 17.iv.2017 (1♂) and 02.v.2017 (2♂) on Hessle foreshore (VC61) by BPW; this is not described in the most frequently used literature. The author visited Dr Michael von Tschirnhaus (University of Bielefeld, Germany) who kindly examined the specimens and confirmed their identity. A rather local Agromyzid which feeds in the stems of bedstraws.

Calycomyza humeralis von Rosser 1840

Mines were discovered on Sea Aster *Aster tripolium* on 25.x.2017, on Hessle foreshore (VC61) by BPW; the distinctive leaf-mine and collected puparia confirm the species. There are two historic Yorkshire records of this insect (06.viii.2013 at Firth Park by Ashley Watson and 26.vii.1976 at Mickletown Ings by Richard Brook). These records were never published, which may suggest

they were erroneous. The Firth Park record was queried at source but, unfortunately, no supporting material could be provided. Therefore, BPW's record represents the first confirmed record for Yorkshire. This is a widespread leaf-miner, in the South at least.

***Cerodontha hammi* Spencer 1971**
A single adult male was collected on 05.viii.2017 on a brownfield site at Hessle (VC61) by BPW; this leaf-miner can be confused with *C. incisa*, however, the eye:jowl ratio is a diagnostic difference between the two.

***Cerodontha suturalis* Hendel 1931**
Adults were collected 09.vii.2017 (1♂), 15.vii.2017 (1♀, 1♂), 18.vii.2017 (1♂) and 14.viii.2017 (1♀) at Hessle (VC61) by BPW; a known miner of *sedges*. Interestingly, the adults were swept from Sea Club-rush *Bolboschoenus maritimus*, which Hering (1930) records breeding this insect from, although it has never been confirmed. Dr Michael von Tschirnhaus (pers. comm.) states that, despite an intensive search of Sea Club-rush in Germany for *C.suturalis*, no mines were ever located.

During October 2017, BPW discovered abundant *Cerodontha*-type mines on this host plant and many were collected in the hope of rearing adult material to confirm if Sea Club-rush is a host plant.

***Chromatomyia asteris* Hendel 1934**
A single adult male was collected on 21.vii.2017 at Hessle (VC61) by BPW; a coastal insect which mines the leaves of Sea Aster. Later in the year, abundant mines were found in the vicinity.

***Chromatomyia scolopendri* Robineau-Desvoidy 1851**
Leaf-mines were recorded on 03.v.2012 at Hackfall Woods (VC64) by CHF; larval mines were discovered on Hart's-tongue Fern *Phyllitis scolopendrium*, with images sent to the author for verification. The larva forms a long, narrow mine on the upper surface of Wall-rue *Asplenium ruta-muraria,* Rustyback Fern *Ceterach offinarum,* Hart's-tongue Fern *Phyllitis scolopendrium* and polypodies, with pupation taking place internally, with the anterior spiracles projecting through the leaf epidermis. This fly shows a distinct westerly distribution in the UK. It would be interesting if further records were to be made in Yorkshire.

***Liriomyza bryoniae* Kaltenbach 1858**
Larval mines and adults were discovered on Tomato plants in a conservatory in Tickton (VC61) on 07.ix.2017 by WRD; a highly polyphagous insect and a serious pest of tomatoes in glasshouses.

***Liriomyza puella* Meigen 1830**
A single adult male emerged on 10.vii.2017 from a collected larval mine on Nipplewort *Lapsana communis* at Raywell (VC61) by BPW; this leaf-mining fly was first discovered in the UK in 2010 (Godfray, 2011) in Oxfordshire. The leaf-mine can be seen in Plate 4, centre pages.

***Melanagromyza pubescens* Hendel 1923b**
A single adult male was collected on 25.v.2017 at Carlton Marsh (VC63) by JDC.

***Napomyza tripolii* Spencer 1966b**
Adults were collected on 12.vii.2017 (1♂), 14.vii.2017 (2♂) and 17.vii.2017 (1♂), swept from coastal saltmarsh containing Sea Aster at Hessle (VC61) by BPW; this is a rare, large Agromyzid which is an internal stem-borer of Sea Aster. This represents the most northerly record to date and potentially only the 5th British record (based on records held by the National Agromyzidae

Recording Scheme and the NBN Atlas).

***Napomyza carotae* Spencer 1966b**
A single adult male was collected on 28.v.2016 at Old Moor (VC63) by JDC; this species can be tricky to separate from *N. hirticornis* and *N. lateralis*. However, the third antennal segment and male genitalia readily distinguish it from the aforementioned pair. The larva are known to feed in the stems of Cow Parsley *Anthriscus sylvestris* and Carrot *Daucus carota*.

***Phytoliriomyza pteridii* Spencer 1973**
A single adult male was collected on 06.vii.2017 at Dunford Bridge (VC63) by JDC; it forms mines on Bracken *Pteridium aquilinum* which are identical to those of *P. hilarella* Zetterstedt 1848, only the male genitalia can reliably separate the two. Any records of *P. hilarella* based on larval mines on Bracken before Spencer's description will have to be treated with caution.

***Phytomyza clematidis* Kaltenbach 1859**
Adults were collected on 23.vi.2017 (1♂) and 26.vi.2017 (1♂) at Hessle (VC61) by BPW; a seed-feeding fly which appears to be quite rare in the country. Host plants include clematis and buttercups.

***Phytomyza tetrasticha* Hendel 1927**
Abundant larval mines were discovered on 30.viii.2017 on Water Mint *Mentha aquatica* at Potteric Carr YWT Nature Reserve, Doncaster (VC63) by BPW; the mine starts as a short compact spiral, followed by a corridor segment which leads to a large secondary blotch. Secondary feeding lines are very conspicuous. Larval leaf-mine as in Plate 4, centre pages.

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Pacific Pink (or Humpback) Salmon in British waters and the first Yorkshire record

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Introduction

The Pacific Pink (or Humpback) Salmon *Oncorhynchus gorbuscha* (Walbaum, 1792), familiar to us from canned-food labels on supermarket shelves, is the most numerous of the five north Pacific salmon. It is anadromous, spawning in fresh water and maturing at sea but, unlike the long-lived Atlantic Salmon *Salar salar* (Linnaeus, 1758), it has a two-year life cycle, the adult breeders dying after spawning. The Pink Salmon is the smallest of the Pacific salmon and substantially smaller than the Atlantic Salmon, attaining an average adult weight of 2.2kg (4.8lb) with a maximum recorded weight of 6.8kg (15lb) and maximum recorded length of 76cm (30 inches) (Note 1).

Its native distribution is the North Pacific seaboard of north eastern Russia (Peter the Great Bay) and south to Japan, the arctic waters of the Beringia region and the Pacific coast of Alaska, Canada and the USA south to California (Wheeler, 1978; Copp, 2017).

Establishment of an introduced north Atlantic population

From the 1950s to the early 2000s, to establish a commercial fishery in the Kola Peninsula and the White Sea basin of north-west Russia, annual transfers of Pink Salmon eggs took place from the Pacific far east of Russia to hatcheries in the Murmansk and Archangelsk region (Gordeeva & Salmenkova, 2011). Initially spawning proved variable and the project was temporarily terminated in 1979. Since failure was deemed to be due to the use of a southern, warmer water population, a more northerly, cold water adapted population was identified from the Okhotsk Sea basin and introductions re-commenced in 1985. This time it resulted in the establishment of self-sustaining populations and of a fishing industry based on the use of coastal net traps. In 2009 catches of Pink Salmon from the White Sea fisheries reached 139 tons, twice the product of the Atlantic Salmon from the same fishery (ICES, 2013; Copp, *loc.cit*).

Self-sustaining populations of Pink Salmon have subsequently become established in Fennoscandia, particularly Norway where commercial catches of up to 20 tons have been made in 11 locations in Norwegian waters in some years (Hesthagen & Sandlund, 2007; ICES, *loc. cit*). By 2017 vagrant specimens of Pink Salmon had occurred in rivers in Iceland, Finland, Norway, Sweden, Denmark, Germany, Poland, France, Ireland and the United Kingdom (Copp, *loc.cit*.) (Notes 2,3).

Early British records - Scotland

The first evidence of Pink Salmon in British waters was a specimen caught on 16 July 1960 in a bag net at Altens Fishing Station (NJ90) on the coast south of Aberdeen (Wheeler & Blacker, 1969; Copp, *loc. cit.*). The next Scottish records were one caught at the Greenhill Fishery on the River Tweed near Norham (NT94) on 19 July 1965, one at Bonar Bridge (NH69) at the head of the Dornoch Firth on 7 July 1967 and one at Stromness Voe (HU34), Shetland on 29 August 1967 (Wheeler & Blacker, *loc. cit.*).

Pink Salmon have now been reported from c.20 Scottish rivers (Note 4); specific details are available for the following examples.

River Ness - fish were entering the river and spawning was confirmed near Inverness (NH64), the activity being filmed for the first time in UK waters on 16 August 2017 by the Ness District Salmon Fishery Board (Notes 5,6). In August 2017 the carcasses of spent females ('kelts') exhibited damage to their heads and caudal fins consistent with spawning activity and in September 2017, the recovery of 'eyed ova' and empty egg shells from redds (salmon nests or spawning sites) indicated successful hatching (Copp, *loc. cit.*).

River Helmsdale - by 30 October 2017 "a few Pinks" had been caught at Helmsdale (ND01) (Note 7).

River Spey - in July 2017 a Pink Salmon was caught at the mouth of the Spey (NJ06) and later another was caught ascending the river (NJ05) (Note 8).

River Dee - on 10 July 2017 the first Pink Salmon was captured by an angler on the Dee and by 16 August there had been at least nine rod captures. In mid-August a group of 30-40 Pink Salmon were observed starting to cut redds in the river gravel for spawning (NO79). An emergency licence was obtained in order to halt this development and 25 specimens were caught and removed from the river. However, on 2 September a new influx had entered the river and proceeded to cut new redds, some 218 being counted in the lower river by 7 September (Copp, *loc. cit*; Note 9).

River Leven - on the west coast a Pink Salmon was caught at Kinlochleven (NN1861) on 12 July 2017 (Note 10).

Ireland

Pink Salmon was listed on the west coast of Ireland, though with no specific record, as a 'vagrant from stocking' (Minchin, 2007). The 2017 influx, which probably led to spawning, was first noticed on 27 April on the Galway Weir fishery. By 14 August 30 Pink Salmon had been recorded in nine Irish rivers, including the Rivers Corrib (M3425) and Cong (M1254) in Co. Galway, the Rivers Drowes (G8155) and Crana (C3432) in Donegal, and the Rivers Moy (Foxford G2604, Cooloronan G2609), Owengarve and Erriff (L8761) in Co. Mayo (Note 11).

Wales

The only record to date is a specimen caught in the Wye drift net fishery at Chepstow (ST5393), Monmouthshire in 1980 (Copp, *loc. cit.*).

England

The first English record was of a rod-caught specimen on 25 August 1960 above Workington Bridge (NY02) on the River Derwent, Cumberland (Wheeler & Blacker, *loc. cit.*). In 2017 a single rod-caught specimen was reported from the River Duddon (SD28) in South Cumbria (Copp, *loc. cit.*). During summer 2017 Pink Salmon were being netted at salmon fisheries along the Northumberland and Durham coasts, e.g. South Shields (NZ46), and single rod-caught fish were reported in the River Coquet (NU20) and the River Tyne at Wylam (NZ1164), both in Northumberland, and two in the River Wear (NZ24), Durham (Copp, *loc. cit.;* Note 12).

From south coast rivers there are confirmed rod captures of single specimens from the River Frome (SY85) in Dorset and River Avon (SU12) in Hampshire. Earlier but undated occurrences in 'odd' years are from rivers as far south as the River Camel (SX07) in Cornwall (Copp, *loc. cit.*).

During the summer of 2017 Pink Salmon were being netted at Yorkshire coastal salmon fisheries and east coast specimens included c.100 from Northumbria (Note 13). In August 2017 one that entered the Humber and worked its way to the upper reaches of the River Hull catchment was caught by a fly fisherman in the Driffield Beck (TA0155) (Notes 14 & 15; Copp, *loc.cit*.).

Discussion

Estimates of the impact of this potentially significant colonisation on the marine and riverine biodiversity of the north-eastern Atlantic region remains to be seen. Initial reviews of the introduction of alien fishes for Scotland (Adams & Maitland, 2001), England (Hill *et al*., 2005) and Ireland (Minchin, 2007) were all prepared prior to the recent influx. 2017 saw a step change in the abundance and widespread range of a dispersing odd-year cohort of Pink Salmon throughout the north-eastern Atlantic. This widespread dispersal contributed markedly to occurrences around the British Isles, a development which triggered the drafting of the *Non-native Species Rapid Risk Assessment* by Copp (*loc.cit*.) (Note 16).

To date no harmful pathogens have been isolated from UK-sampled specimens of Pink Salmon and no measureable competitive pressures have been identified on the indigenous Atlantic Salmon, other native salmonids or indigenous fish in general. However, the current UK policy is to prevent the naturalisation of Pink Salmon. The Environment Agency (EA) and the Centre for Environment, Fisheries and Aquaculture Science (Cefas) recommend the prohibition of Pink Salmon importation, their keeping and release, and advise anglers to remove and humanely kill any caught specimens (Copp, *loc. cit.*). River catchment managers are also attempting to destroy spawning redds and to remove incoming fish by electro-fishing (see Note 9).

With self-sustaining populations already established in north-west Russia and Scandinavia, attempts at control in the United Kingdom may be a long term, labour-intensive and ultimately futile ambition. How other fish/animals respond to the presence of this new and potentially prolific fish will need to be monitored. Certainly, the prospect of entire annual adult cohorts expiring after spawning may have interesting ecological and behavioural outcomes, not least on vertebrate carnivores and scavengers.

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The Silver Carp: a new species in Yorkshire and Humberside

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The Silver Carp *Hypophthalmichthys molitrix* (Valenciennes, 1844) is endemic to the large eastward-flowing rivers between latitudes 21° N to 54° N in southern Asia, eastern China, and far eastern Russia. Silver Carp and other members of its genus have been widely introduced into rivers, lakes and reservoirs through East Asia, where they now represent more than 60% of all freshwater fish caught for human consumption (Kolar *et al.*, 2005). Members of the genus are filter feeders, consuming large quantities of phytoplankton. They have been introduced into North America because of their prolific breeding, large sizes and ability to control algal blooms but they are now regarded as a problem, out-competing native fish faunas and being detrimental to aquatic habitats (Kolar, *loc.cit.*). Considerable numbers are bred in fish farms

in central Europe, notably Hungary, Croatia, Poland and the Czech Republic, where they are largely marketed as a food source (see Note 1).

Silver Carp first entered England in 1975 as unidentified fry in a consignment of Grass Carp *Ctenopharyngodon idella* to be used in experiments on water weed control and imported from an Austrian fish farm (Stott & Buckley, 1978). Evidently some of the contaminant fry became accidentally introduced into angling sites within the Yorkshire and Humberside region, their presence only being noticed as they developed identifiable characteristics.

Around the year 2000 anglers at Hayfield Lakes adjacent to the river Torne, Finningley (SE6300; SK6399) began to catch what they referred to as an 'upside-down carp', the fish having relatively large heads, upward-pointing mouths and curiously low-positioned eyes. A photograph of the first example, caught by John Hitchen, appeared in *The Angling Star* showing it to be Silver Carp. During the winter of 2003-04, while draining the lakes, fishery staff encountered "... a fair number of the unusual 'upside down carp' [Silver Carp]" (Livsey, 2004). In June 2002 a specimen weighing 21lb 4oz was caught by Glen Walker during an angling match held at 'The Nest', Wintringham, North Lincolnshire (SE9312). The venue owners suggested that the fish was a Silver Carp, stocked many years ago as fry and never seen or caught since (*The Angling Star,* vi. 2002).

A 30lb specimen was caught by Chris Johnson at Greaves End angling lake (SE8131) near Eastrington. It was returned to the water but later died, apparently of stress. It is thought the fish came to be in the pond when an adjacent ornamental pool was extended by the previous owner two decades earlier. A photograph of the specimen, taken by the site owner Darren Cole, featured in the press and was identified by the Environment Agency (Wood, 2011; *Hull Daily Mail* 18.vii.2011).

Silver Carp are regarded by the Environment Agency as invasive aliens and specimens are removed and humanely killed when encountered, as was the case at Staverley Mere, Cheshire (*Angler's Mail* 19.ix. 2014).

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Notes

1. www.eumofa.eu/documents/20178/76127/price+structure+casestudy:in+the+ supply+chain+for+fresh+carp+in+Central Europe.pdf

Topmouth Gudgeon: an alien fish in Yorkshire

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The Topmouth Gudgeon or Stone Moroko *Pseudorasbora parva* (Temminck & Schlegel, 1846) is a member of the carp family (Cyprinidae) native to eastern Asia, occurring in Japan, Taiwan, Korea and the Amur, Yangtze and Hoanghe river basins of China (Ekmekci & Kirankaya, 2006).

Competitive advantages

Measuring up to 11cm but more typically only 5cm in length, Topmouth Gudgeon possess a relatively large mouth and well-ossified jaws with strong bundles of collagen fibres in the lips. Besides feeding on a range of small aquatic arthropods, they are capable of preying on water snails: specimens smaller than their mouths are eaten whole but with larger snails a breach is made in the shell through which the flesh is removed. Their capability to provide noticeable grazing pressure upon water snails was evaluated in a laboratory experiment with ramshorn snails as prey. Topmouth Gudgeon (1.4–3.0 g) are able to consume up to 150 mg of snails daily, which is four times more than other cyprinids (such as Common Nase *Chondrostoma nasus* and Grass Carp *Ctenopharyngodon idella*) of the same size class (Adámek, 2002).

Their ability to breed four times per year and become sexually mature in one year demonstrates a substantially greater reproductive capability than the native Gudgeon *Gobio gobio*. They are known to feed on fish eggs, adding to their ability to suppress and out-compete the fry stages of indigenous fishes. It is therefore feared they may cause considerable negative changes in aquatic ecosystems (Adámek, *loc.cit.*). Furthermore, they have been found to transmit an infectious parasite closely related to 'Rosette Agent', known to be deadly to salmonid fish stocks (Pinder *et al.*, 2005).

Invasive dispersal

The Topmouth Gudgeon has been accidentally introduced by aquacultural translocations into Europe, central Asia, the Middle East and North Africa. In continental Europe it was first noticed in 1961 in ponds near to the Danube in Romania. It has since spread rapidly, colonising at least 19 countries by 2001 (Table 1). Although its westerly progress through Europe suggests a natural colonisation of linked river catchments, its early appearance in England (mid-1980s), well ahead of nearby France (1993) or Belgium (1996), resulted from an artificial introduction at Crampmoor Fisheries, Hampshire (Gozlan *et al.*, 2002). Early occurrences in Lithuania in 1982 and a hugely discontinuous occurrence in the Iberian Peninsula in 2001 also suggest artificial introductions.

Having demonstrated its invasive potential in continental Europe and its establishment in large numbers at several locations across England from introductions in the mid-1980s to 2002 (Domaniewski & Wheeler, 1996; Gozlan *et al., loc.cit.*), it is clearly capable of surviving in the wild and becoming established in river systems around Britain. A detailed survey of its distribution in England and Wales undertaken by Pinder *et al.* (*loc.cit.*) identified 25 populations. Ten of these populations were in ponds and lakes and, due to their location and water connections, were potentially able to colonise the catchments of the Hampshire Test, Rivers Severn and Trent and the Yorkshire Ouse.

Table 1 Chronological table of the spread across Europe of Topmouth Gudgeon *Pseudorasbora parva,* based on data in Ekmekci & Kirankaya (*loc.cit.*).

Region	**Earliest record or *date of publication**
Romania	1961
Hungary	1967
France (Rhine basin)	1970s
Czechoslovakia	1974
Serbia & Montenegro	1977
Bulgaria (North)	1979*
Albania	1981*
Lithuania	1982
Turkey	1982
Ukraine	1984*
Greece	1984-85
Germany	1985*
England	mid-1980s
Austria	1986
Italy	1987
Bulgaria (South)	1988*
Poland	1991*
France (Rhone Canal)	1993
Belgium	1996
Armenia	2001*
Spain	2001

For the above reasons the Topmouth Gudgeon is now classified under the Import of Live Fish Act 1980 as a non-native species of high risk (Anon., 2006 a & b). The Environment Agency, which has a duty to undertake removals where possible, consequently conducts regular electro-fishing of affected waters in an attempt to stop the spread and eradicate the fish (Anon., 2006a).

Identification of fish fry

To minimise future risks of unintentional translocation and further spread of Topmouth Gudgeon in the UK, various morphological characters have been recognised which allow reliable identification of this fish during the early stages of development. The combination of myomere numbers (sections of skeletal muscle visible in the fry), the nature of the internal pigmentation associated with the notochord and the lack of a single row of external melanophores along the lateral line organ reliably distinguish this fish from the native fauna of the British Isles. Thus, fishery managers and environmental agencies can screen for the presence of Topmouth Gudgeon in the young-of-the-year when authorising transportation of fish (Pinder, *loc.cit.*).

Eradication programme and method

A programme to eradicate an established Topmouth Gudgeon population, present since 2002 in a recreational fishery at Ratherheath Tarn (SD4895), Cumbria, involved screening of outfalls to prevent fish movements off site. Non-target fish were then removed. The fishery was then treated with a rotenone-based piscicide in March and April 2005. Whereas rotenone is toxic to fish and insects it is not harmful to mammals or birds. The mean Topmouth Gudgeon density prior to rotenone application was 6.1 per m^2. Following the application of the piscicide, none were recorded. Following rotenone degradation, the non-target fish were returned. These

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Plate 1. Badger bait-marking study. See p17.
Map of the study area showing Badger sett and dung pit positions, with an indication of Badger activity.

Plate 2. Badger bait-marking study.

Left: Peanuts mixed with coloured marker.

Below left: Badger feeding on the marked food.

Below: Dung showing a mixture of purple and red coloured marker pellets.

Philip Whelpdale

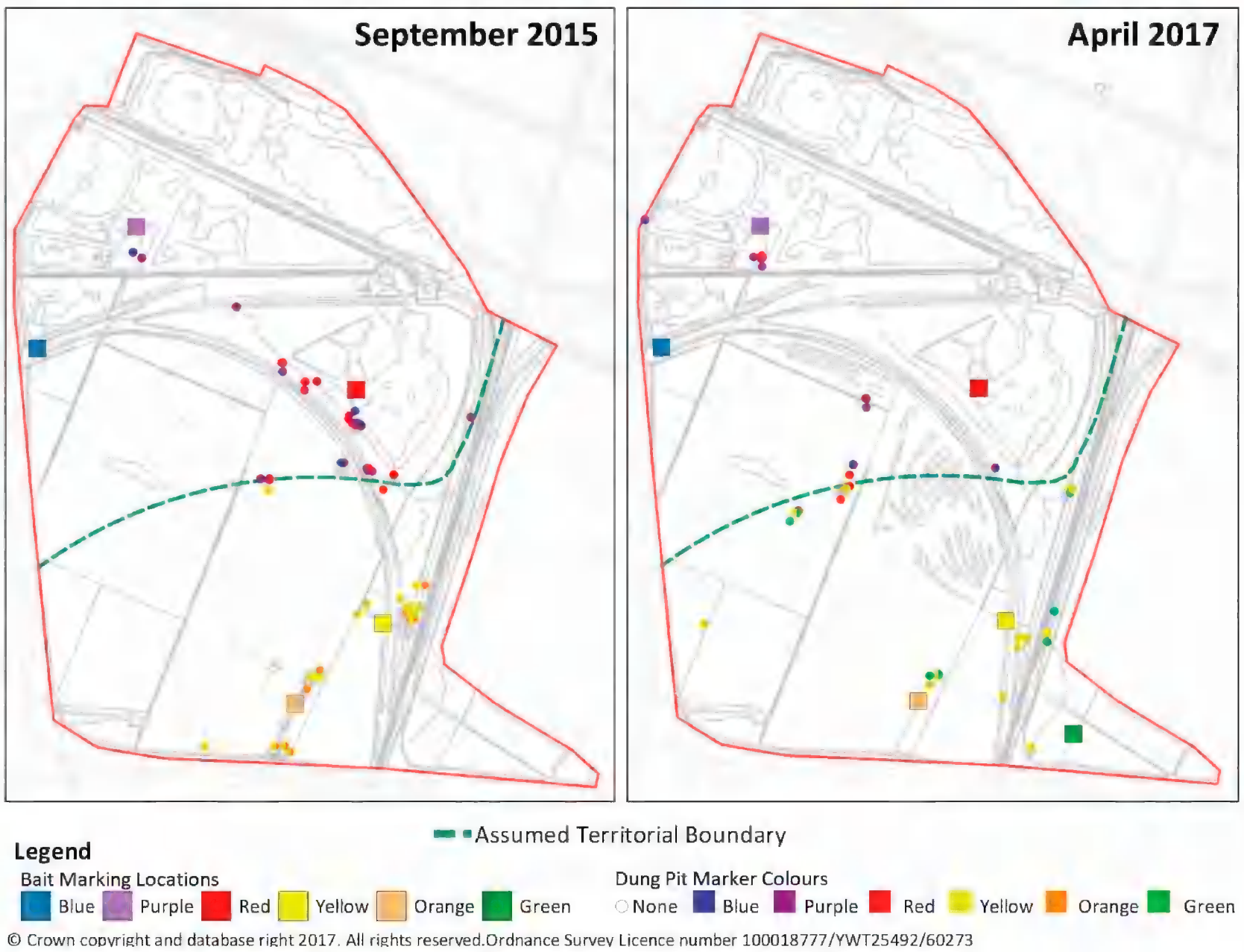

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Plate 3. Badger bait-marking study, showing a territorial boundary inferred from the results (see p20).

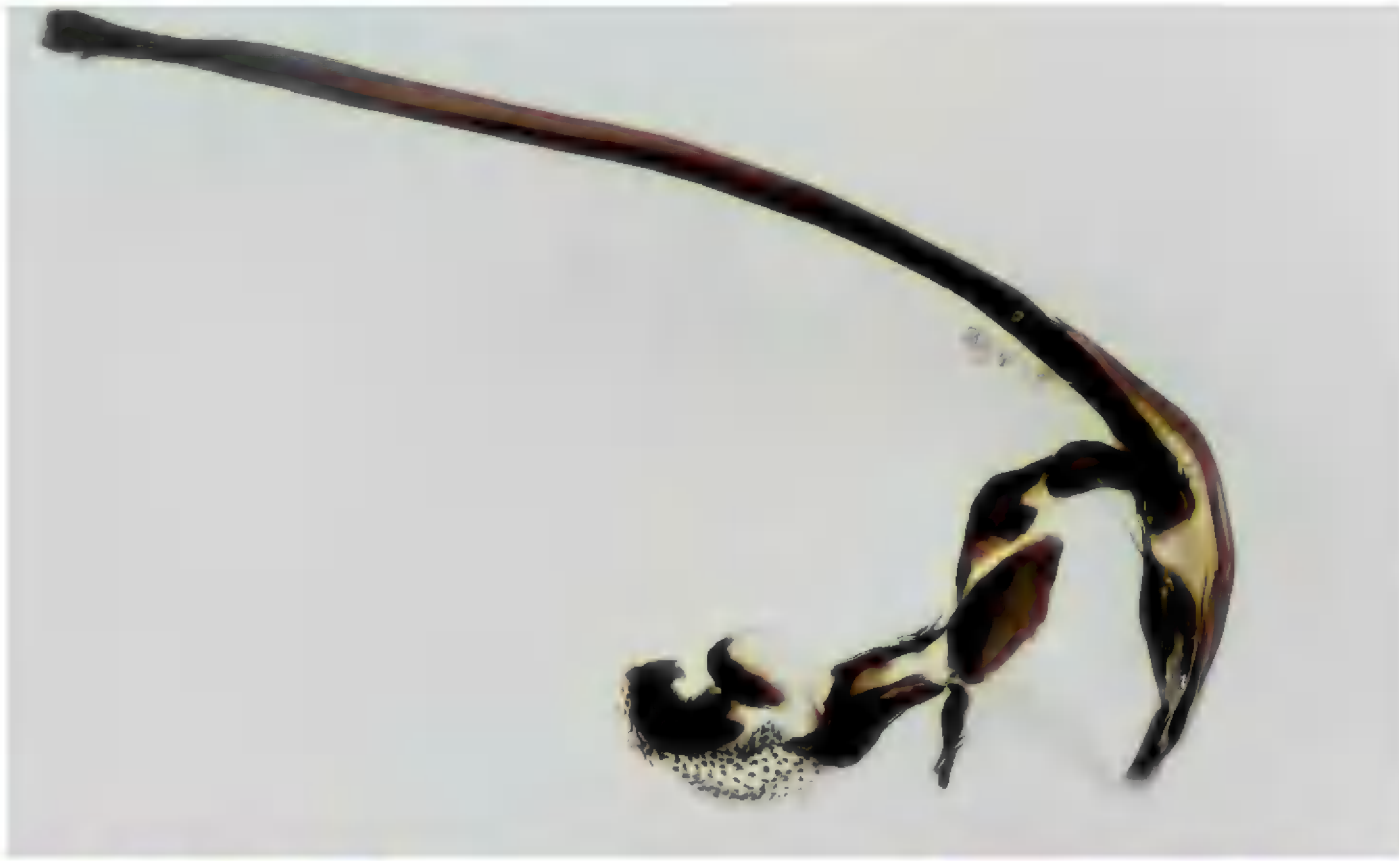

Plate 4. Leaf-mining flies (Agromyzidae) new to Yorkshire (see p31-33). *Top*: Genitalia of *Amauromyza luteiceps*. *Above left*: Tenanted mine of *Liriomyza puella*. *Above right*: Mine of *Phytomyza tetrasticha.*

B.Warrington

Plate 5. Yorkshire Jumping Plant Lice (see p42). The uncommon *Spanioneura fonscolombii* Foerster, 1848, found at Edenthorpe, Doncaster in October 2015, on Box *Taxus sp*. A.S.Foster

Plate 6. Extensive underwater meadow of stonewort in Pond 5 at Quarryhouse Moor, Northumberland (see pp57-59).
R. O. Shillaker

Plate 7. Habitats and species which could be seen during the YNU Excursions in 2018.
Top row: Thorne Moors NNR (see pp68-69): *Left*: a ditch with typical vegetation. *Right*: Greater Bladderwort *Utricularia vulgaris* growing in a pool.
Lower row: Spurn Peninsula (see pp73-76): *Left:* Sea Holly *Eryngium maritimum* with the migratory hoverfly *Scaeva pyrastri*. *Right:* A view of the peninsula showing dune habitats, saltmarsh and estuarine mud.
Joyce Simmons

subsequently spawned, successfully producing a cohort of young-of-the-year. This contrasted with 2004 when only young-of-the-year of Topmouth Gudgeon were recorded (Allen *et al.*, 2006; Britton & Brazier, 2006).

As the eradication of Topmouth Gudgeon at Ratherheath Tarn appeared to be successful, the method was replicated in March 2006 at the Elm Hagg fishery (SE5379), near Oldstead, North Yorkshire in the Ouse catchment (Anon., 2006a and b). A five-year eradication programme, funded through the Water Framework Directive, was implemented in 2010 with the objective of removing all British populations by 2017.

Environment Agency distribution maps indicated two confirmed Yorkshire sites in 2004 in the northern vale of York (SE39 and SE57). By 2014 both sites were reported free from the fish, leaving only six confirmed populations remaining in England and Wales, all of which were to the south of the Wash (see Note 1).

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Notes

1. https://marinescience.blog.gov.uk/2015/07/03/eradicating-topmouth-gudgeon/

Yorkshire Jumping Plant Lice (Psyllids)

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Introduction

The psyllids form a superfamily within the suborder Stenorrhyncha of the Hemiptera. They are all phytophagous and some introduced psyllids are agricultural or horticultural pests. One non-native psyllid *Aphalara itadori* is in trials as a biological agent against Japanese Knotweed *Fallopia japonica* (Djeddour & Shaw, 2010). In Britain there are 102 recorded species representing five families; at present 55 of these are recorded from Yorkshire. Overall the number of records held by the YNU is insufficient to truly represent current distribution and status.

The following list represents all currently recorded Yorkshire psyllids together with associated Vice Counties, statuses, hosts and years for the first and latest records. The host data are indicative only as many psyllids overwinter as adults on evergreen plants, shrubs and trees, while continental food plants may differ from British records. Some of the Yorkshire records are based on plant gall identification and, consequently, where the psyllid cannot be reliably identified without examination of the insect itself, such records are indicative only and may not have been validated. *Psyllopsis* species forming galls on Ash *Fraxinus excelsior* fall into this group.

The status convention is based on: 1 to 9 records = Rare; 10 to 24 = Scarce; 25 to 49 = Uncommon; 50 to 99 = Frequent; 100 to 199 = Common; 200 or more = Very Common.

Several psyllids are only known from imported non-native plant hosts and there is a distinct possibility of an increasing number of non-native plant feeders being found in Yorkshire. The taxonomy of European psyllids is something of a minefield as there are currently no published unified keys for identification nor a comprehensive checklist. The references below have been used in compiling this paper and would assist in the identification of specimens.

Family: **APHALARIDAE** Burckhardt & Ouvard, 2012

Subfamily: APHALARINAE Löw, 1879

Aphalara exilis (Weber & Mohr, 1804)
VC61, VC62, VC63, VC64: scarce, docks, 1958-2013.

Aphalara pauli Loginova, 1979
VC62: rare, docks, 6 October 1987.

Aphalara polygoni Foerster, 1848
VC61, VC62, VC63, VC64: scarce, knotweeds, 1937-2006 (most records unverified due to taxonomic changes).

Apahalara purpurascens (Hartig, 1841)
VC63: rare, docks, 1991-2005.

Craspedolepta flavipennis (Foerster, 1848)
VC61, VC62: rare, chysanthemum, hawk's beards, cat's ears, hawkbits 1923-1976.

Craspedolepta malachitica (Dahlbom, 1851)
VC61, VC63: rare, artemisias, 1986-1990.

Craspedolepta nebulosa (Zetterstedt, 1828)
VC61, VC62, VC63, VC64, VC65: frequent, Rosebay Willowherb *Chamaenerion angustifolium*, 1960-2003.
Craspedolepta nervosa (Foerster, 1848)
VC61, VC63: scarce, Yarrow *Achillea millefolium*, 1977-2003.
Craspedolepta pilosa (Oshanin 1870)
VC61: rare, artemisias, 1997-2005.
Craspedolepta sonchi (Foerster, 1848)
VC63: rare, sonchus, hawkbits, chrysanthemums, hawk's beards, 1990-2003.
Craspedolepta subpunctata (Foerster, 1848)
VC61, VC63: scarce, Rosebay Willowherb, 1980-2007.

Subfamily: RHINOCOLINAE Vondráček, 1957
Rhinocola aceris (Linnaeus 1758)
VC61, VC63: scarce, Field Maple *Acer campestre*, 1986-2007.

Subfamily: SPONDYLIASPIDINAE Schwarz, 1898
Ctenarytaina eucalypti (Maskell, 1890)
VC61, VC64: rare, eucalyptus, 1994-1997.
Ctenarytaina peregrina Hodkinson, 2007
VC63: rare, eucalyptus, 2000-2017.

Family: **LIVIIDAE** Löw, 1879

Subfamily: LIVIINAE Löw, 1879
Livia junci (Schrank, 1789)
VC61, VC62, VC63, VC64, VC65: uncommon, rushes, 1937-2016.

Subfamily: EUPHYLLURINAE Burckhardt & Ouvard, 2012
Tribe: EUPHYLLURINI Crawford, 1914
Euphyllura olivina (Costa, 1839)
VC63: rare. European Olive *Olea europaea*, 18 September 2011.
Tribe: DIAPHORINI Vondráček, 1951
Psyllopsis discrepans (Flor, 1861)
VC61, VC63, VC64: scarce, Ash, 1951-2013.
Psyllopsis distinguenda Edwards, 1913
VC63: rare, Ash, 1989-2002.
Psyllopsis fraxini (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: very common, Ash, 1937-2015. The majority of records are from plant galls, which may not be a true reflection of the species forming the galls.
Psyllopsis fraxinicola (Foerster, 1848)
VC61, VC62, VC63, VC64, VC65: uncommon, Ash, 1960 -2015.

Tribe: STROPHINGIINI Burckhardt & Ouvard, 2012
Strophingia ericae (Curtis, 1835)
VC61, VC62, VC63, VC64, VC65: uncommon, Heather *Calluna vulgaris*, 1957-2005.

Family: **PSYLLIDAE** Latreille, 1807

Subfamily: PSYLLINAE Latreille, 1807

Arytaina genistae (Latreille, 1804)

VC61, VC62, VC63: uncommon, Broom *Cytisus scoparius*, Dyer's Greenweed *Genista tinctoria*, 1973-2016.

Arytainilla spartiophila (Foerster, 1848)

VC61, VC62, VC63: scarce, Broom, 1937-2002.

Baeopelma foersteri (Flor, 1861)

VC61, VC62, VC63, VC64: scarce, Alder *Alnus glutinosa*, 1937-2016.

Cacopsylla affinis (Löw, 1880)

VC61, VC63, VC64, VC65: scarce, Hawthorn, 1976-2003.

Cacopsylla ambigua (Foerster, 1848)

VC61, VC62, VC63, VC65: frequent, willows, 1979-2015.

Cacopsylla brunneipennis (Edwards, 1896)

VC63, VC64: uncommon, willows, 1959-2003.

Cacopsylla crataegi (Schrank, 1801)

VC61, VC62, VC63, VC64: rare, Hawthorn, 1937-1980.

Cacopsylla fulguralis (Kuwayama, 1908)

VC61, VC63: scarce, Eleagnus, 2003-2016.

Cacopsylla hippophaes (Foerster, 1848)

VC61, VC62, VC63: rare, Hawthorn, 1957-2005.

Cacopsylla mali (Schmidberger, 1836)

VC61, VC62, VC63, VC64, VC65: uncommon, Crab Apple *Malus sylvestris*, 1936-2003.

Cacopsylla melanoneura (Foerster, 1848)

VC61, VC62, VC63, VC64, VC65: frequent, Hawthorn, 1937-2005.

Cacopsylla moscovita (Andrianova, 1948)

VC61, VC62, VC63: rare, willows, 1989-2013.

Cacopsylla peregrina (Foerster, 1848)

VC61, VC62, VC63, VC64, VC65: frequent, Hawthorn, 1936-2013.

Cacopsylla pruni (Scopoli, 1763)

VC63: rare, Blackthorn *Prunus spinosa*, 1990-2000.

Cacopsylla pulchra (Zetterstedt, 1838)

VC61, VC62, VC63, VC65: scarce, willows, 1937-2015.

Cacopsylla pyricola (Foerster, 1848)

VC61, VC62, VC63, VC64: rare, Pear *Pyrus communis*, 1990-1998.

Cacopsylla sorbi (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: uncommon, Rowan *Sorbus aucuparia*, 1962-2015.

Cacopsylla ulmi (Foerster, 1848)

VC2, VC3: rare, Elm *Ulmus minor*, 1976-2002.

Chamaepsylla hartigii (Flor, 1861)

VC61, VC62, VC63, VC64, VC65: uncommon, Silver Birch *Betula pendula*, 1978-2014.

Livilla variegata (Löw, 1881)

VC61, VC63, VC64: rare, Laburnum *Laburnum anagyroides*, 1992-2002.

Psylla alni (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: frequent, Alder, 1933-2016.

Psylla betulae (Linnaeus, 1758)

VC62: rare, Silver Birch, 1 October 1937.

Psylla buxi (Linnaeus, 1758)

VC61, VC62, VC63, VC64: scarce, Box *Buxus sempervirens*, 1973-2015.

Spanioneura fonscolombii Foerster, 1848)

VC61, VC63, VC64: uncommon, Box, 2014-2017 (see Plate 5, centre pages).

Family: **TRIOZIDAE** Löw, 1879

Bactericera acutipennis (Zetterstedt 1828)

VC63: rare, Marsh Cinquefoil *Potentilla palustris*, Lady's Mantle *Alchemilla xanthoclora*, 15 July 1995.

Bactericera albiventris (Foerster 1848)

VC61, VC62, VC63, VC64: scarce, White Willow *Salix alba*, 1959-2015.

Bactericera curvatinervis (Foerster 1848)

VC63: rare, willows, 1981-2003.

Heterotrioza chenopodii (Reuter 1876)

VC61, VC63: rare, oraches, 1976-2006.

Lauritrioza alacris (Flor, 1861)

VC61, VC62, VC63: scarce, Bay *Laurus nobilis*, 1999-2016.

Trichochermes walkeri (Foerster 1848)

VC62, VC63: scarce, Buckthorn *Rhamnus catharticus*, 1979-2002.

Trioza apicalis Foerster, 1848. Carrot Psyllid, a crop pest

VC63: rare, umbellifers, 2009-2017.

Trioza galii Foerster 1848

VC61, VC62, VC63, VC64, VC65: uncommon, bedstraws, 1959-2006.

Trioza remota Foerster, 1848

VC62, VC63: frequent, oaks, 1935-2006.

Trioza urticae (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: Stinging Nettle *Urtica dioica*, 1935-2015.

Taxonomic Changes since Hodkinson & White (1979) and adopted herein:

Aphalara rumicola Klimaszewski, 1966 sensu Ossiannilssoni 1992 synonym of *Aphalara polygoni* Foerster, 1848.

Aphalara polygoni of Ossiannilsson 1992 and authors other than Foerster, 1848, renamed *Apahalara freji* Burkhardt & Lauterer, 1997 (all specimens previously named *Aphalara polygoni* require verification).

Aphalara crispicola Ossiannilsson, 1987 synonym of *Aphalara purpurascens* (Hartig, 1841) neither species were previously known from Britain.

Aphalara exilis (Weber & Mohr, 1804) has been divided into three species which include *Aphalara pauli* Loginova, 1979 and *Aphalara ulicis* Foerster, 1848.

Ctenarytaina peregrina Hodkinson, 2007 is new to Britain

Livia juncorum (Latreille, 1798) is a synonym of *Livia junci* (Schrank, 1789).

Psylla alaterni Foerster, 1848 is now *Cacopsylla alaterni* (Foerster, 1848).

Psylla albiceps Flor, 1861 is now *Cacopsylla albiceps* (Flor, 1861).

Psylla ambigua Foerster, 1848 is now *Cacopsylla ambigus* (Foerster, 1848).

Psylla bagnalli Heslop-Harrison, J.W., 1916 is now *Cacopsylla bagnalli* (Heslop-Harrison, 1916).

Psylla brunneipennis Edwards, 1896 is now *Cacopsylla brunneipennis* (Edwards, 1896).

Psylla crataegi (Schrank, 1801) is now *Cacopsylla crataegi* (Schrank, 1801).

Psylla foersteri Flor, 1861 is now *Baeopelma foersteri* (Flor, 1861).

Psylla hartigi Flor, 1861 is now *Chamaepsylla hartigi* (Flor, 1861).

Psylla hippophaes Foerster, 1848 is now *Cacopsylla hippophaes* (Foerster, 1848).

Psylla mali Schmidberger, 1836 is now *Cacopsylla mali* (Schmidberger, 1836).

Psylla melanoneura Foerster, 1848 is now *Cacopsylla melanoneura* (Foerster, 1848).
Psylla moscovita Andrianova, 1948 is now *Cacopsylla moscovita* (Andrianova, 1948).
Psylla peregrina Foerster, 1848 is now *Cacopsylla peregrina* (Foerster, 1848).
Psylla pruni (Scopoli, 1763) is now *Cacopsylla pruni* (Scopoli, 1763).
Psylla pulchra (Zetterstedt, 1840) is now *Cacopsylla pulchra* (Zetterstedt, 1840).
Psylla pyricola Foerster, 1848 is now *Cacopsylla pyricola* (Foerster, 1848).
Psylla sorbi (Linnaeus, 1758) is now *Cacopsylla sorbi* (Linnaeus, 1758).
Psylla ulmi Foerster, 1848 is now *Cacopsylla ulmi* (Foerster, 1848).
Floria variegata (Löw, 1881) is now *Livilla variegata* (Löw, 1881).
Trioza acutipennis (Zetterstedt, 1828) is now *Bactericera acutipennis* (Zetterstedt, 1828).
Trioza alacris Flor, 1861 is now *Lauritrioza alacris* (Flor, 1861).
Trioza albiventris Foerster, 1848 is now *Bactericera albiventris* (Foerster, 1848).
Trioza curvatinervis Foerster, 1848 is now *Bactericera curvatinervis* (Foerster, 1848).
Trioza chenopodii Reuter, 1876 is now *Heterotrioza chenopodii* (Reuter, 1876).

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A list of some British species and selected photographs can be viewed at: https://www.britishbugs.org.uk/gallery/Psylloidea/psylloidea.html

Yorkshire Ichneumons: Part 7

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Introduction
Yorkshire statuses are taken from the chart shown on the YNU website www.ynu.org.uk/insects/parasitic_wasps
† = new county record * = new vice-county record

Subfamily **PIMPLINAE**
Tribe ***Ephialtini***
Corrections and additions to Ely (2013a):
Tromatobia variabilis (Holmgren, 1856). New to Yorkshire.
The record in Ely (2013a) is an error.
†VC62: Strensall Military Training Area 21.8.2015 R.Crossley.
Acrodactyla degener (Haliday, 1838). Scarce in Yorkshire.
The VC62 record from Scawton was redetermined by Horstmann as *A.similis* Horstmann, 2011 (Ely, 2016).
*VC62: Over Dinsdale, Northallerton 3.9.2012 W.A.Ely.
Tribe ***Pimplini***
Additions and correction to Ely (2014b):
Pimpla flavicoxis Thomson, 1877.
The unconfirmed report from VC61 by Hincks (1953 p135) was based on a specimen in the Manchester Museum which has now been examined and found to be a female *P. insignatoria.*
Pimpla melanacria Perkins, 1941. Scarce in Yorkshire.
*VC61: Rush Wood, Naburn 10-17.6.2003 S.E.M.Fraser.
Perithous scurra (Panzer, 1804). Scarce in Yorkshire.
*VC65: R. Ure at Bellflask 20.6.2017 B.Best.

Subfamily **TRYPHONINAE**
Additions to Ely (2015a):
Tribe ***Eclytini***
Eclytus difficilis Kasparyan, 1977. New to Yorkshire.
† VC64 Hollins Hill, Baildon 29-31.10.2016 H.N.Whiteley.
Tribe ***Tryphonini***
Cosmoconus elongator (Fabricius, 1793). Scarce in Yorkshire.
*VC65: High Batts NR 26.6.2003 J.Jobe.
Polyblastus (Polyblastus) cancer (Hartig, 1837). New to Yorkshire.
†VC61: North Cave Wetlands YWT NR 17.8.2015 R.Crossley.

Subfamily **ADELOGNATHINAE**
Additions to Ely (2015b):
Adelognathus dorsalis (Gravenhorst, 1829). Rare in Yorkshire.
*VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 11-18.9.2003 S.E.M.Fraser.
Adelognathus thomsoni Schmiedeknecht, 1911. New to Yorkshire.
†VC63: Hickleton 22.6.1977 P.Skidmore.

Subfamily **CRYPTINAE**
Tribe ***Gelini***
Additions to Ely (2016):
Subtribe ***Hemitelina***
Hemiteles maricesca Schwarz & Shaw, 2000. New to Yorkshire.
†VC61: Park Wood, Ross Moor, Melbourne 4-11.9.2003 S.E.M.Fraser (det. M.Schwarz).
Arotrephes perfusor (Gravenhorst, 1829). New to Yorkshire.
†VC61: Sandy Lane, Wintringham 17.5.2014 W.A.Ely.
Arotrephes speculator (Gravenhorst, 1829). New to Yorkshire.
†VC63: Treeton Dyke 24.4.1991 J.A.Newbould,P.J.Bowler,H.E.Beaumont (det. M.Schwarz).
Cremnodes atricapillus (Gravenhorst, 1815). Rare in Yorkshire.
*VC63 Brecks Plantation, Listerdale 7.10.1984 W.A.Ely (det. M.Schwarz).
Cremnodes costalis Horstmann, 1992. Rare in Yorkshire.
*VC61: Rush Wood, Naburn 10-17.6.2003 S.E.M.Fraser.
Subtribe ***Gelina***
Gelis edentatus (Förster, 1850). Rare in Yorkshire.
*VC63 Lindrick GC 12.9.2002 W.A.Ely (det. M.Schwarz).
Gelis nitidus Horstmann, 1986. New to Yorkshire.
†VC63: Moor Bank Triangle, Hatfield Moor 7.2015 unknown.
Subtribe ***Mastrina***
Charitopes leucobasis Townes, 1983. **New to Britain**.
†VC64: Hollins Hill, Bradford 24-25.8.2015 H.N.Whiteley (det. M.Schwarz).
Lochetica westoni (Bridgman, 1880). New to Yorkshire.
†VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 10-17.6 + 11-18.9.2003 S.E.M.Fraser.
Subtribe ***Phygadeuontina***
***Orthizema* gracilicornutum** Schwarz, 2018. **New to Britain**.
†VC63: Elmhirst, Thorn Moors 10.2015 unknown (det tM.Schwarz).
Orthizema subannulatum (Bridgman, 1883). New to Yorkshire.
†VC64: Hollins Hill, Baildon 8-14.4.2015 H.N.Whiteley (de tM.Schwarz).
Platyrhabdus inflatus (Thomson, 1884). New to Yorkshire.
†VC64: Hollins Hill, Baildon 8-15.6.2015 H.N.Whiteley (det tM.Schwarz).
Uchidella brevicauda Horstmann, 1993. Rare in Yorkshire.
*VC62: Beast Cliff 6.9.1986 W.A.Ely (det. M.Schwarz).
Stibeutes gravenhorstii Förster, 1850. New to Yorkshire.
†VC61: Wheldrake Ings YWT NR 29.3.2017 J.Small.
Phygadeuon trichops Thomson, 1884. Rare in Yorkshire.
*VC63 Inkle Moor, Thorne Moors NNR 15-21.8.2012 H.R.Kirk,P.Kendall (det.M.Schwarz).
Subtribe ***Stilpnina***
Mesoleptus devotus (Förster, 1876). Scarce in Yorkshire.
*VC63: Inkle Moor, Thorne Moors NNR 20-27.8.2012 H.R.Kirk,P.Kendall.
Atractodes (Asyncrita) croceicornis Haliday, 1839. Rare in Yorkshire.
*VC64: Hollins Hill, Baildon 21-27.9.2015 H.N.Whiteley.
Tribe ***Cryptini***
Gambrus carnifex (Gravenhorst, 1829). Scarce in Yorkshire.
*VC61: Stork Hill wood, Tickton 4.8.2017 W.Dolling.
Hidryta sordida (Tschek, 1871). Rare in Yorkshire.
*VC65: High Batts NR 26.6.2003 J.Jobe.

Subfamily **BANCHINAE**

The new RES *Handbook* (Brock, 2017) is a major step forward in clarifying the ichneumons in this subfamily and their identification. Several new species are described and many new taxonomic features incorporated into the keys. Many of the latter are indices comparing measurements within one feature (e.g. length to width) and between features, and the keys are copiously illustrated.

Tribe ***Glyptini***

Apophua bipunctoria (Thunberg, 1822). Rare in Yorkshire.

*VC61: Allerthorpe Common 15.7.1951 J.H.Elliott.
†VC62: Malton Road, York 29.7.1945 J.H.Elliott.
*VC63: Tinsley Park 11.6.1989 A.Brackenbury.
*VC64: Askham Bog YWT NR 17.7.1946 W.D.Hincks.

Apophua evanescens (Ratzeburg, 1848). Rare in Yorkshire.

Reported from VC63 by Coldwell (1999) p61.

*VC64: Timble Ings 19.8.1984 W.A.Ely.
*VC65: Druid's Plantation 1.9.1984 W.A.Ely.

Apophua genalis (Möller, 1883). Rare in Yorkshire.

Reported from VC64 by Brock (2017) p30.

Diblastomorpha cylindrator (Fabricius, 1787). Frequent in Yorkshire.

Reported from VC63 by Denton (2017) p444.

†VC61: Buttercrambe Woods 10.6.1944 J.H.Elliott.
*VC62: Malton Road, York 30.6.1945 J.H.Elliott.
*VC64: Askham Bog YWT NR 3.8.1945 + 27.7.1946 W.D.Hincks.
*VC65: Thorpe Perrow Arboretum 17.7.1982 W.A.Ely.

Glypta (Conoblasta) ceratites (Gravenhorst, 1829). Uncommon in Yorkshire.

Unconfirmed report from VC61 in Morley (1908) p149. Reported from VC62 by Ely (1991) p146 and from VC64 by Ely (2011b) p215.

*VC61: Allerthorpe 29.7 + 6.8.1951 J.H.Elliott.
*VC63: Holmehouse Wood 3.8.1940 J.Wood.
*VC65: High Plantation, Mickleden Moor 14.7.2013 W.A.Ely.

Glypta (Conoblasta) elongata Holmgren, 1860. Frequent in Yorkshire.

Reported from VC63 by Hincks & Dibb (1940) p176.

*VC61: Melbourne undated W.J.Fordham (det. J.F.Perkins).
*VC62: Rawcliffe 30.6.1987 D.H.Smith.
*VC64: Shipley Glen 4.9.1925 + 6.8.1932 J.Wood.
*VC65: Bardale 19.7.1986 W.A.Ely.

Glypta (Conoblasta) extincta Ratzeburg, 1852. Scarce in Yorkshire.

*VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 10-17.6.2003 S.E.M.Fraser.
*VC62: Ellerburn Bank YWT NR 4-8.7.2010 P.J.Mayhew.
†VC63: Ravenfield Park 10.6.1985 W.A.Ely (det. J.P.Brock).
*VC64: Timble Ings 11.6.2011 D.Parkinson.
*VC65: Guisecliffe 7.7.2011 C.H.Fletcher.

Glypta (Conoblasta) fronticornis Gravenhorst, 1829. Scarce in Yorkshire.

Reported from VC61 by Hincks (1953) p136, from VC63 by Hincks (1951) p28 and from VC64 by Parkinson (2015) p15.

*VC65: Cordilleras, Feldom 18.8.1990 W.A.Ely.

Glypta (Conoblasta) lapponica Holmgren, 1860. Rare in Yorkshire.

Unconfirmed report from VC63 in Porritt (1925) p87.

†VC62: Hole of Horcum 4.8.1937 H.Britten jnr. (det. H.Britten).

*VC63: Agden Bog YWT NR + Wigtwizzle 5.7.1996 A.Tereshkin (det. A.Tereshkin).

Glypta (Conoblasta) monoceros Gravenhorst, 1829. Scarce in Yorkshire.

Reported from VC61 by Hincks (1953) p136 and from VC63 and VC64 by Brock (2017) p36.

Glypta (Conoblasta) paludosa Brock, 2017. New to Yorkshire.

†VC62: Black Hills, Sandy Bank & South Otterington 29.6.2011 W.A.Ely.

Glypta (Glypta) bifoveolata Gravenhorst, 1829. Scarce in Yorkshire.

Unconfirmed reports from VC62 by Walsh & Rimington (1956) p276 and from VC63 by Carr (1914) p94.

*VC61: Allerthorpe 6.8.1951 J.H.Elliott.
*VC62: Redcar dunes 7.8.2011 W.A.Ely.
*VC63: Denaby Ings YWT NR 1978 W.A.Ely.
†VC64: Hook Moor, Aberford 25.7.1936 J.Wood.
*VC65: Hardings 18.7.2014 W.A.Ely.

Glypta (Glypta) consimilis Holmgren, 1860. Rare in Yorkshire.

*VC63: Newsholme Dene, Keighley 1.8.1936 J.Wood.
†VC64: Shipley Glen 6.8.1940 J.Wood.

Glypta (Glypta) femorator Desvignes, 1856. Rare in Yorkshire.

Unlocalised report in Brock (2017) p45.

*VC61: Skipwith 13.8.1950 J.H.Elliott.
*VC62: Buttercrambe Hall 30.6.1951 J.H.Elliott.
*VC63: Lindrick Dale Quarry 30.6.1979 W.A.Ely.

Glypta (Glypta) haesitator Gravenhorst, 1829. Rare in Yorkshire.

Unconfirmed report from VC65 in Morley (1908) p152.

†VC63: Holmehouse Wood 21.7.1940 J.Wood.
*VC64: Askham Bog YWT NR 1.9.1950 J.H.Elliott.

Glypta (Glypta) incisa Gravenhorst, 1829. Rare in Yorkshire.

Reported from VC63 by Brock (2017) p48.

Glypta (Glypta) mensurator (Fabricius, 1775). Frequent in Yorkshire.

Reported from VC61 by Hincks (1953) p136, from VC62 by Ely (2011a) p209 and Crossley (2011) p210, from VC63 and VC64 by Hincks & Dibb (1940) p176 and from VC65 by Newbould *et al.* (2013) p57.

Glypta (Glypta) nigricornis Thomson, 1899. Rare in Yorkshire.

Unlocalised report in Brock (2017) p46.

†VC61: Spurn Point YWT NR 16.7.1952 S.Shaw.
*VC63: Harthill Lower Reservoir 11.6.1980 W.A.Ely.

Glypta (Glypta) nigrina Desvignes, 1856. Rare in Yorkshire.

†VC61: Melbourne undated W.J.Fordham (det. J.F.Perkins).
*VC63: Holmehouse Wood 28.7.1937 J.Wood.

Glypta (Glypta) nigrotrochanterata Strobl, 1902. Uncommon in Yorkshire.

Reported from VC62 by Ely (2013b) p237.

*VC61: Potter Brompton 21.6.1986 W.A.Ely.
*VC63: Holmehouse Wood 13 + 27.7.1940 + 3.8.1941 + 26.7.1946 J.Wood.
*VC64: Malham Tarn NT, fields by Field Station 1984 unknown.
*VC65: Bardale Beck 19.7.1986 W.A.Ely.

Glypta (Glypta) parvicaudata Bridgman, 1889. Rare in Yorkshire.

†VC61: Barmby Moor 27.5.1930 W.J.Fordham (det. J.F.Perkins).
*VC62: Fen Bog YWT NR 6.6.2014 R.Crossley.
*VC63: Deep Pits 28.7.1987 A.Brackenbury.
*VC64: Elam Wood 12.5.1945 J.Wood.

Glypta (Glypta) pedata Desvignes, 1856. Rare in Yorkshire.
Reported from VC63 by Brock (2017) p53.
*VC64: Ash Wood, Drax 27.7.1987 W.A.Ely.
Glypta (Glypta) pictipes Taschenberg, 1863. Rare in Yorkshire.
*VC61: Allerthorpe Common YWT NR 5.8.1989 W.A.Ely.
†VC63: Canklow Wood 7.6.1985 W.A.Ely.
Glypta (Glypta) pusilla Brock, 2017. New to science.
Reported from VC63 in Morley (1908) p156, Skidmore *et al.* (1987) p127, Skidmore (2006) p148 and Ely (2014a) p38 (all as *G. (G.) resinanae*) and in the original description (Brock, 2017 p51-52).
Glypta (Glypta) resinanae Hartig, 1838. Rare in Yorkshire.
†VC63: Holmehouse Wood 7.6 + 13.7.1947 J.Wood (det. H.Britten).
Glypta (Glypta) sculpturata Gravenhorst, 1829. Rare in Yorkshire.
Reported from VC61 by Hincks (1953) p136 and from VC64 by Hincks & Dibb (1940) p175.
*VC62: Wrea Head 7-10.9.1956 W.D.Hincks (det. W.D.Hincks).
Glypta (Glypta) similis Bridgman, 1886. Scarce in Yorkshire.
*VC61: Stone Creek 7.6.1980 W.A.Ely.
*VC62: Great Lake, Castle Howard 9.7.1988 W.A.Ely.
*VC63: Abbeydale 3.7.1971 T.H.Riley.
†VC64: Brayton 22-23.6.1943 W.D.Hincks.
*VC65: Garsdale Station 5.7.2013 W.A.Ely.
Glypta (Glypta) trochanterata Bridgman, 1886. Scarce in Yorkshire.
Reported from VC61 by Hincks (1953) p136, from VC62 by Ely (1991) p146 and from VC64 by Hincks & Dibb (1940) p175.
*VC63: Lindrick Golf Course 17 + 25.6.1986 S.J.Hayhow.
Glypta (Glypta) vulnerator Gravenhorst, 1829. Scarce in Yorkshire.
†VC61: Allerthorpe 6.8.1951 J.H.Elliott.
*VC63: Flash Lane, Bramley 2.6.1978 M.Crittenden,D.W.Twigg.
*VC64: Austwick Moss 17.7.1983 J.Payne.

Tribe ***Atrophini***
Arenetra pilosella (Gravenhorst, 1829). Rare in Yorkshire.
†VC63: Norland 20.4.1913 unknown.
*VC64: Bashall Moor Wood 15.4.1950 BB & YCP (det. H.Britten).
Alloplasta piceator (Thunberg, 1824). Uncommon in Yorkshire.
Unconfirmed report from VC63 in Hincks (1945a) p37. Reported from VC61 by Hincks (1946) p160, (1953) p136 and from VC64 by Hincks (1943) p91, (1945) p37 and Key (1987) p384.
*VC62: Seamer 17.6.1975 W.A.Ely.
*VC63: Marsden Clough 19.5.1940 H.Britten (det. H.Britten).
Alloplasta plantaria (Gravenhorst, 1829). Rare in Yorkshire.
†VC63: Hatfield Moor 17.5.1987 W.A.Ely.
Lissonota (Meniscus) lineolaris (Gmelin, 1790). Frequent in Yorkshire.
Reported from VC62 by Hincks (1957) p21 and from VC63 and VC64 by Hincks & Dibb (1940) p176.
*VC61: Allerthorpe Common 21.6.1964 D.Smith.
*VC65: Pepper Arden 1.7.2013 W.A.Ely.
Lissonota (Lampronota) biguttata Holmgren, 1860. Uncommon in Yorkshire.
Reported from VC61 by Hincks (1953) p136.
*VC62: Malton Road, York 30.4.1944 + 7 + 29.7.1945 J.H.Elliott.
*VC63: Holmehouse Wood 2.8.1931 J.Wood.
*VC64: Harrogate 8.7.1945 J.H.Elliott.

*VC65: Hutton Conyers 26.6.2011 + 20.7.2015 C.H.Fletcher.

Lissonota (Lampronota) fulvipes (Desvignes, 1856). Rare in Yorkshire.
Reported from VC61 by Brock (2017) p65.

Lissonota (Lampronota) pimplator (Zetterstedt, 1838).
Unconfirmed report from VC62 in Walsh & Rimington (1956) p277.

Lissonota (Lampronota) setosa (Geoffroy, 1785).
Unconfirmed unlocalised report in Bairstow *et al.* (1882) p108 and Morley (1908) p228.

Lissonota (Lissonota) clypeator (Gravenhorst, 1820). Common in Yorkshire.
Unconfirmed reports from VC62 in Morley (1908) p205 and Walsh & Rimington (1956) p277 and from VC64 in Bairstow *et al.* (1882) p108, Roebuck (1907) p215 and Morley (1908) p205. Reported from VC61 by Hincks (1953) p136 and from VC63 by Hincks & Dibb (1940) p176.

*VC62: Malton Road, York 30.4.1945 J.H.Elliott.
*VC64: Upwood, Morton 29 + 31.7.1942 J.Wood.
*VC65: Semerwater YWT NR 20.8.1988 W.A.Ely.

Lissonota (Lissonota) digestor (Thunberg, 1824). Rare in Yorkshire.

*VC62: Mill Wood, Hovingham 1.5.1990 A.Grayson.
†VC63: Potteric Carr YWT NR 5.1976 J.T.Burns.

Lissonota (Lissonota) fundator (Thunberg, 1824). Common in Yorkshire.
Unconfirmed reports from VC64 in Wilson (1881) p153, Bairstow *et al.* (1882) p108, Roebuck (1907) p215, Morley (1908) p207 and Butterfield (1909) p197. Reported from VC63 by Hincks & Dibb (1940) p176.

*VC61: Burstwick 16.9.1950 RAD.
*VC62: Clifton Ings 26.8.1945 J.H.Elliott.
*VC64: Bolton Percy 15.9.1943 W.Bramley.
*VC65: Low Wood, Caldbergh 5.10.1985 W.A.Ely.

Lissonota (Lissonota) impressor Gravenhorst, 1829). Uncommon in Yorkshire.
Unconfirmed report from VC63 in Ely (2014a) p38.

*VC61: Atwick + Dunnington + North Fordingham Carrs + Skerne 25.8.2011 W.A.Ely.
*VC62: Clifton Ings 26.8.1945 J.H.Elliott.
†VC63: Old Cut, Utley 31.8.1941 J.Wood.
*VC64: Askham Bog YWT NR 29.8.1950 J.H.Elliott .
*VC65: Greystone Lane, Manfield 3.9.2012 W.A.Ely.

Lissonota (Lissonota) magdalenae Pfankuch, 1921. Rare in Yorkshire.
Reported from VC64 by Brock (2017) p72.

Lissonota (Loxonota) histrio (Fabricius, 1798). Rare in Yorkshire.
Reported from VC61 by Hincks (1953) p136.

Lissonota (Campocineta) argiola Gravenhorst, 1829. Rare in Yorkshire.
Reported from VC62 and VC63 by Brock (2017) p81.

Lissonota (Campocineta) buccator (Thunberg, 1824). Rare in Yorkshire.

†VC61: Allerthorpe 15.7.1951 J.H.Elliott.

Lissonota (Campocineta) carbonaria Holmgren, 1860. Rare in Yorkshire.

†VC63: Brecks Plantation, Listerdale 5.5.1985 W.A.Ely.
*VC64: Low Field Lane, Grafton Lodge Boroughbridge 13.7.2011 W.A.Ely.

Lissonota (Campocineta) clypealis Thomson, 1877. Rare in Yorkshire.
Reported from VC63 by Hincks & Dibb (1940) p176 and from VC65 by Ely (2015d) p237.

*VC64: Timble Ings 19.8.1984 W.A.Ely.

Lissonota (Campocineta) coracina (Gmelin, 1790). Common in Yorkshire.
Unconfirmed reports from VC62 in Anon (1906) p434, Morley (1908) p201 and Walsh & Rimington (1956) p276. Reported from VC61 by Hincks (1953) p136, from VC63 by Roebuck (1907) p215 and

from VC63 and VC64 by Hincks & Dibb (1940) p176.

*VC62: Clifton Ings 24.8.1945 J.H.Elliott.

*VC65: Masham Tip 30.8.1980 W.A.Ely.

Lissonota (Campocineta) dubia Holmgren, 1856. Rare in Yorkshire.

*VC61: Jeffry Bog YWT NR 15.5.2015 R.Crossley.

†VC64: Swinsty Moor 18.6.2011 D.Parkinson.

*VC65: Stang Forest 12.7.2012 W.A.Ely.

Lissonota (Campocineta) fletcheri Bridgman, 1882. Rare in Yorkshire.

Reported from VC63 *by* Ely (2014a) p43 and Brock (2017) p87.

Lissonota (Campocineta) folii Thomson, 1877. Rare in Yorkshire.

†VC61: Frog Hall, Allerthorpe Common 2.9.1929 W.J.Fordham (det. J.F.Perkins).

*VC63: St Ives 11.8.1945 J.Wood.

Lissonota (Campocineta) gracilenta Holmgren, 1860. Scarce in Yorkshire.

Reported from VC64 by Ely (2015c) p234 and from VC65 by Ely (2014c) p233.

*VC61: Beverely Clump 25.7.2011 W.A.Ely (det. J.P.Brock).

*VC62: Haxby 1.8.2013 T.J.Crawford.

*VC63: Holmehouse Wood 7.8.1937 J.Wood.

Lissonota (Campocineta) gracilipes Thomson, 1877. Rare in Yorkshire.

†VC63: Lindholme Hall, Hatfield Moor 11.6.2011 W.A.Ely.

Lissonota (Campocineta) maculata Brischke, 1865. Rare in Yorkshire.

†VC63: Thorne Moors 25.7.1976 P.Skidmore.

Lissonota (Campocineta) mutator Aubert, 1969. Rare in Yorkshire.

†VC62: Raincliffe Wood 5.1980 R.S.Key.

Lissonota (Campocineta) nigridens Thomson, 1889. Rare in Yorkshire.

Reported from VC63 by Ely (2014a) p43 and Brock (2017) p100.

*VC64: Askham Bog YWT NR 1.6.2014 + Near Wood 23.6.2015 R.Crossley.

Lissonota (Campocineta) palpalis Thomson, 1889. Rare in Yorkshire.

*VC62: South Otteringham 29.6.2011 W.A.Ely.

†VC63: Oughtibridge SB 29.7.1982 A.Brackenbury.

*VC64: Malham Tarn Fen NT 5.2013 P.W.H.Flint,S.Flint.

*VC65: Hutton Conyers 5.7.2011 C.H.Fletcher.

Lissonota (Campocineta) palpator Aubert, 1969.

Unconfirmed report (as *errabunda*) from VC62 in Morley (1908) p225.

Lissonota (Campocineta) picticoxis Schmiedeknecht, 1900. Rare in Yorkshire.

Reported from VC64 by Brock (2017) p92.

Lissonota (Campocineta) proxima Fonscolombe, 1854. Scarce in Yorkshire.

Reported from VC63 by Hincks & Dibb (1940) p176.

*VC62: Skinningrove 3.9.2014 W.A.Ely.

*VC65: Rake Beck Wood 4.10.1985 I.F.G.McLean.

Lissonota (Campocineta) punctiventrator Aubert, 1977. Rare in Yorkshire.

†VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 8-15.7.2003 S.E.M.Fraser.

Lissonota (Campocineta) punctiventris Thomson, 1877. Rare in Yorkshire.

†VC63: Primrose Hill, Huddersfield ex fungus 20.3.1985 unknown.

Lissonota (Campocineta) semirufa (Desvignes, 1856). Scarce in Yorkshire.

*VC61: Bluebell Tea Rooms, Kilnsea 10-20.5.2011 A.Gibson.

*VC62: Ellerbeck 8.8.1936 H.Britten (det. H.Britten).

*VC63: Melton Wood ex Tineids under bark 28.4.1973 (P.Skidmore).

†VC64: Aberford 20.6.1936 M.D.Barnes.

Lissonota (Campocineta) simulator Brock, 2017. New to science.
Reported from VC63 in the original description (Brock, 2017 p103).
Lissonota (Campocineta) tenerrima Thomson, 1877. Scarce in Yorkshire.
Reported from VC64 by Hincks & Dibb (1940) p176 .

*VC61: Park Wood, Ross Moor, Melbourne 4-11.9.2003 S.E.M.Fraser.
*VC62: Mill Wood, Glaisdale 31.7.2015 G.Featherstone.
*VC63: Trowles Wood, Wentworth Park 3.9.1981 W.A.Ely.
*VC65: River Swale, Richmond 3.10.1985 A.E.Stubbs.

Lissonota (Campocineta) versicolor Holmgren, 1860. Rare in Yorkshire.
Unlocalised report in Morley (1908) p207.

*VC64: Hollins Hall, Baildon 24.7.2016 D.Parkinson.

Cryptopimpla anomala (Holmgren, 1860). Rare in Yorkshire.
Reported from VC64 by Brock (2017) p111.

*VC62: Lockton High Moor 5.5.1990 A.Grayson.
*VC63: Mixenden 23.5.1967 unknown.

Cryptopimpla calceolata (Gravenhorst, 1829). Rare in Yorkshire.
Reported from VC63 by Ely (2014a) p43 and Brock (2017) p111.
Cryptopimpla caligata (Gravenhorst, 1829). Rare in Yorkshire.
Reported from VC61 by Brock (2017) p110 and from VC62 and VC63 by Hincks & Dibb (1940) p176 and Brock (2017) p110.
Cryptopimpla errabunda (Gravenhorst, 1829). Rare in Yorkshire.
Unlocalised report in Brock (2017) p111.

*VC61: Middleton-on-the-Wolds 5.9.2013 W.A.Ely.
*VC62: Malton 22.6.1963 E.F.Gilmour.
*VC63: Firbeck Hall 21.6.1987 W.A.Ely.

Tribe ***Banchini***
Exetastes adpressorius (Thunberg, 1824). Scarce in Yorkshire.
Reported from VC63 by Bateson (2002) p43, Skidmore (2006) p148 and Ely (2014a) p38.

*VC61: Cali Heath YWT NR 15.7.2011 R.Crossley.
*VC62: Wass 10.8.1935 M.D.Barnes.
*VC64: disused rly, Drax Hales 26.7.1987 W.A.Ely.
*VC65: Ballowfield LNR 7.8.2010 W.A.Ely.

Exetastes atrator (Forster, 1771). Uncommon in Yorkshire.
Unconfirmed reports from VC61 in Fordham (1926) p118 and from VC62 in Walsh & Rimington (1956) p276. Reported from VC63 and VC64 by Hincks & Dibb (1940) p176.

*VC61: Hessle 1942 + 1947 D.H.Smith (det. J.F.Perkins).
*VC62: Whitby 3.7.1936 H.Britten.

Exetastes femorator Desvignes, 1856. Rare in Yorkshire.
Reported from VC61 by Hincks (1951) p28, (1953) p136 and Brock (2017) p120.
Exetastes fornicator (Fabricius, 1781). Rare in Yorkshire.
Reported from VC61 by Brock (2017) p111.
Exetastes illusor Gravenhorst, 1829. Scarce in Yorkshire.

*VC61: Land of Nod 5.7.1981 W.A.Ely.
*VC62: Pexton Bank, Dalby Forest 10-12.6.2014 (P.J.Mayhew).
†VC63: Marley, Keighley 4.8.1940 J.Wood.
*VC64: River Wharfe, Otley 19.8.1984 W.A.Ely.

Exetastes laevigator (Villers, 1789). Rare in Yorkshire.
Reported from VC63 by Ely (2014a) p43.

Exetastes nigripes Gravenhorst, 1829. Rare in Yorkshire.
Reported from VC63 by Ely (2014a) p43 and Brock (2017) p120.
Banchus dilatatorius (Thunberg, 1824).
Unconfirmed report from VC64 in Morley (1908) p283.
Banchus falcatorius (Fabricius, 1775). Rare in Yorkshire.
Unconfirmed report from VC62 in Morley (1903) p158, Roebuck (1907) p214 and Morley (1908) p289. Reported from VC61 by Hincks (1953) p136 and Brock (2017) p125 and from VC63 by Skidmore *et al.* (1987) p127, Skidmore (2006) p148 and Ely (2014a) p38.
Banchus hastator (Fabricius, 1793). Rare in Yorkshire.
Reported from VC63 by Brock (2017) p126.
Banchus palpalis Ruthe, 1859. Rare in Yorkshire.
Reported from VC65 by Newbould *et al* (2013) p57 and Brock (2017) p124.
Banchus pictus Fabricius, 1798. Scarce in Yorkshire.
Unconfirmed reports from VC62 in Roebuck (1907) p214 and from VC63 in Butterfield (1909) p197 and Carr (1914) p94. Reported from VC61 by Hincks (1945b) p143.

*VC63: Marley 29.7.1937 J.Wood.
*VC64: Barden 22.5.1919 R.Butterfield (det M.G.Fitton).
*VC65: Brown Beck, Colsterdale 6.6.1982 W.A.Ely.

Banchus volutatorius (Linnaeus, 1758). Uncommon in Yorkshire.
Unconfirmed report from VC62 in Morley (1908) p286. Reported from VC61 by Hincks (1953) p136 and from VC63 by Skidmore *et al.* (1987) p127, Coldwell (1999) p61, Skidmore (2006) p148 and Ely (2014a) p38.

*VC62: Ellerbeck 8.8.1936 H.Britten (det. M.G.Fitton).
*VC64: Barden 29.6.1918 R.Butterfield.

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Field Note: Bristly Stonewort at Quarryhouse Moor, Northumberland

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Quarryhouse Moor Ponds, also called Quarryhouse Pools, are a series of ponds in hollows among spoil of former limestone quarry workings in the hills north-west of Alnwick in VC68 (North Northumberland). The site at NU108248, at an altitude of c.200m, was first notified as an SSSI in 1986 but more recently has been incorporated into the larger Bewick and Beanley Moors SSSI. There are said to be a total of ten ponds with about half drying out in summer. The original SSSI notification and subsequent documentation draw attention to a number of significant biological features, including an assemblage of five Amphibian species. The presence of a stonewort associated with base-rich flushes is included in the original notification but there is no mention of stoneworts in the ponds.

RS visited the site in June 2014 and June 2017 and counted six ponds which varied in size and apparently also in water quality, as indicated by differences in water clarity and the presence/ absence of floating green algae. Stoneworts were present in at least three ponds. An extensive underwater stonewort meadow was noted in one of the largest ponds (Pond 5) which had very clear water (Plate 6, centre pages). A sample taken from close to the shoreline of Pond 5 (NU10892484) in June 2017 was identified by NS as Bristly Stonewort *Chara hispida*. The luxuriant growth of stonewort would be favoured by the calcareous water of this former limestone quarry. Our 2017 record was not the first for this species from Quarryhouse Moor Ponds: according to the BSBI database there are records from 2011 (at NU108248 by J. Shanklin) and 2012 (at NU108247 by J. O'Reilly). However, it is notable that these records extend the known northern inland range of Bristly Stonewort in the UK. It had previously been reported that a 2007 record from the quarry pond area at Little Bellcrags (NY778730) in VC67 (South Northumberland) was the most northerly inland record in the UK (Groom *et al.,* 2017). In Scotland, Bristly Stonewort becomes exclusively a near-coastal species with sparse records north to Orkney.

Bristly Stonewort is a medium to large spiny stonewort of green-greyish colour, with a surface encrustation of calcium carbonate, growing up to 120cm in length (Bryant & Stewart, 2011). As well as occurring in limestone (and marl) ponds and lakes, other known habitats supporting Bristly Stonewort in Britain include sand dune pools, machair lakes, water bodies in clay and gravel pits, flushes and peat cuttings (Stewart & Church, 1992). It is an uncommon species in most of the UK, locally frequent in East Anglia but sparsely scattered elsewhere and more or less absent from areas with acidic geology. The distribution map in Moore (1986) indicates several inland records in Scotland, in the Borders, Fife and Tayside. However, subsequent investigation

has indicated that these are all likely to be the generally similar Rugged Stonewort *C. rudis*, which in Britain has predominantly been recorded from Scotland.

It is possible that Pond 5 may have contained more than one species of stonewort because some differences in the appearance of the stoneworts were noted when viewed with binoculars from the shore in June 2014. However, this was not further investigated in June 2017. It is noteworthy that Delicate Stonewort *C. virgata* and Common Stonewort *C. vulgaris var papillata* were found in an adjacent pond at this site (NU109248) by J. O'Reilly in 2012.

A water sample was taken from Pond 5 during the June 2017 visit. The concentrations of nitrate expressed as nitrogen (nitrate-N) and inorganic phosphate expressed as phosphorus (phosphate-P) were determined in unfiltered water using test kits (Kyoritsu PackTest) provided by the Freshwater Habitats Trust as part of its Clean Water for Wildlife initiative. These test kits give a concentration range and are a useful screening tool to quickly assess the level of nutrient pollution in water bodies. For further details of the methodology, use and limitations of these kits see Biggs *et al.* (2016) and McGoff *et al.* (2017). Nitrate-N and phosphate-P concentrations in the water sample from Pond 5 were below the limit of quantification, i.e. < 0.2mgN/l and < 0.02mgP/l. Although water was sampled on only one occasion the results are suggestive of clean water with respect to these two nutrient pollutants. Further investigations, particularly at other times of the year, would be required to confirm this.

Low aqueous concentrations of dissolved nitrates, phosphates and certain transitional metal ions (such as copper, cadmium and cobalt) are thought to favour the growth of stoneworts (Lambert, 2009; Lambert & Davy 2011). However, there is wide variation in the tolerances of different stoneworts to these nutrients, with Bristly Stonewort appearing to be one of the least likely to be found growing at elevated nutrient concentrations (Lambert, 2007; Lambert, pers. comm.).

To summarise, Quarryhouse Moor has been identified as the most northerly known inland site of the Bristly Stonewort in the UK. The luxuriant growth of stonewort in one pond is consistent with the calcareous waters of this former limestone quarry and the recorded low concentrations in open water of dissolved nitrate and inorganic phosphate.

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YNU Botanical Section Reports 2017

VC61 Botanical Report *Richard Middleton*

As in previous years, much of the effort in 2017 was directed towards recording for the forthcoming Atlas 2020 and many of us were directed in our botanising by geographical, rather than botanical considerations. This strategy, however, did yield some interesting plants, with records for Smooth Stonewort *Nitella flexilis* (P.J. Cook) and Shore Horsetail *Equisetum x litorale* at Hagg Wood, Dunnington, a fine display of Marsh Fern *Thelypteris palustris* at Kelleythorpe and a visit to Hornsea in October which recorded 240 different taxa within a single square kilometre, Fat Duckweed *Lemna gibba* being one of the star finds.

There have been some interesting fern finds over the year hinting that East Yorkshire's historically impoverished pteridophyte flora may be improving. There were records for urban House Holly-fern *Cyrtomium falcatum* in Hornsea (J. Killingbeck & G. Jarvis), Fortune's Holly-fern *Cyrtomium fortunei* in Beverley and signs that Intermediate Polypody *Polypodium interjectum* is becoming much more frequent. A combined meeting of local natural history societies at Fordon reported the continued flourishing of the rare Few-flowered Fumitory *Fumaria vaillantii* accompanied by the scarce Fine-leaved Fumitory *F. parviflora.* A large site of demolished housing in the east of Hull provided a wide and interesting assemblage of aliens and casuals which included the neophyte Narrow-leaved Ragwort *Senecio inaequidens* and great quantities of Fig-leaved Goosefoot *Chenopodium ficifolium* (K. Glover), a plant now infrequent in the riding.

VC63 Botanical Report *Donald Grant*

The bramble *Rubus nemoralis* was found at Newmillerdam near Wakefield. Western Gorse *Ulex gallii* and the bramble *Rubus newbouldii* were at Windhill near Shipley. Wild Plum *Prunus domestica* was found in a roadside hedge alongside the A637 at Darton. Common Whitlowgrass *Erophila verna* and Black Spleenwort *Asplenium adiantum-nigrum* were by a railway viaduct at Lockwood near Huddersfield. Soapwort *Saponaria officinalis* was found at Warmfield Common near Wakefield while Spindle *Euonymus europaeus* was in a hedgerow alongside the B6134 at Acton near Featherstone. A ditch and grassland by the B6134 at Loscoe near Normanton had

Great Horsetail *Equisetum telmateia,* English Elm *Ulmus procera* and Bristly Oxtongue *Picris echioides*. Ponds and dykes at Agbrigg near Wakefield produced Greater Tussock-sedge *Carex paniculata,* Bottle Sedge *C. rostrata* and Pendulous Sedge *C. pendula* as well as Glaucous Club-Rush *Schoenoplectus tabernaemontani* and Broad-leaved Pondweed *Potamogeton natans*. Narrow-leaved Water-plantain *Alisma lanceolatum* was in the Calder & Hebble Canal at Dewsbury and Hop *Humulus lupulus* was in a hedge near the railway station at South Elmsall.

In Castleford centre by the new river bridge was Garden Angelica *Angelica archangelica,* Patience Dock *Rumex patientia* and Giant Hogweed *Heracleum mantegazzianum*. The brambles *Rubus echinatoides* and *R. pruinosus* were at Rothwell Country Park, along with Slender Rush *Juncus tenuis*. Near the recycling factory at South Kirkby were Hoary Cress *Lepidium draba* s.l., Wild Teasel *Dipsacus fullonum,* Saltmarsh Rush *Juncus gerardii,* Canadian Pondweed *Elodea canadensis* and Common Fleabane *Pulicaria dysenterica*.

Athersley Country Park near Barnsley produced Lesser Pond-sedge *Carex acutiformis*, Hairy Sedge *C. hirta* and Oval Sedge *Carex leporina* together with Curled Pondweed *Potamogeton crispus,* Common Fleabane, Aspen *Populus tremula,* Dark Mullein *Verbascum nigrum,* Glabrous-headed Hawkweed *Hieracium vagum,* Virginia-creeper *Parthenocissus quinquefolia* and Lizard's-tail or Swamp lily *Saururus cernuus* (family Saururaceae), which is a **new VC63 record***; it is a perennial marginal aquatic neophyte from Eastern North America, with a first British record notified in BSBI News 83, p.40. At nearby Carlton Marsh N.R. were Greater Spearwort *Ranunculus lingua,* Wood Horsetail *Equisetum sylvaticum,* Southern Marsh-orchid *Dactylorhiza praetermissa*, Heather *Calluna vulgaris,* False Fox-sedge *Carex otrubae*, Common Spike-rush *Eleocharis palustris,* Oval Sedge, Goat's-beard *Tragopogon pratensis* ssp. *minor* and the brambles *Rubus tuberculatus, R. dasyphyllus, R. vestitus, R. eboracensis, R. nemoralis* and *R. echinatoides*.

VC64 Botany Section Meeting *Phyl Abbott*

For the VC64 Botanical Section meeting last year we walked along the towpath of the Leeds and Liverpool Canal from Canal Road, Kirkstall, to the end of the canal in the centre of Leeds. The most attractive plants in the canal were Arrowhead *Sagittaria sagittifolia,* Yellow Water-lily *Nuphar lutea* and Fringed Water-lily *Nymphoides peltata* – all in flower. Gypsywort *Lycopus europaeus* was frequent on the wall of the canal but the less common Pellitory-of-the-wall *Parietaris judaica* was seen only once.

On the other side of the towpath the area between the canal and the River Aire was largely woodland and, where there had once been a steep grass bank, there were now rows of flats. Buddleja *Buddleja davidii* and Indian Balsam *Impatiens glandulifera* had made themselves at home. In the more open areas Confused Michaelmas Daisy *Aster novi-belgii* and Common Knapweed *Centaurea nigra* were frequent. On the towpath wall towards the end of the canal there were several ferns: Hart's-tongue *Phyllitis scolopendrium,* Wall-rue *Asplenium ruta-muraria*, Maidenhair Spleenwort *A. trichomanes* and Black Spleenwort *A. adiantum-nigrum*. 188 plants were recorded and 40 of these were new to the tetrad list.

After the meeting Anthony and Rita Grainger led a few of us to a road verge near the site of the old Kirkstall Forge where a scattering of Baby's Breath *Gypsophila elegans* has appeared. This species, native to the Caucasus area, is new to VC64 and extremely rare in Britain.

South Yorkshire Natural History Day 2018

W.A. Ely

The event, subtitled 'What's Going On in South Yorkshire? - A Festival of Amateur Natural History', organised by Bob Croxton and Peter Clegg and chaired by Bob, was held on Saturday 24th February 2018 at Treeton Miners Welfare, Arundel Street, Treeton, in the Rother Valley close to both Rotherham and Sheffield.

This is the ninth annual get-together and symposium featuring amateur naturalists and societies in South Yorkshire involving a range of speakers and displays. It is an opportunity to meet and chat with other naturalists and hear presentations by societies and groups on aspects of their work. There is time between the talks for discussion and for looking at displays and book sales.

The event is open to all and free to attend but it is necessary to book a place in advance. Details of the 2019 event will be available on the Sorby NHS website, which includes directions and information on bus links from both Rotherham and Sheffield.

The displays were in a small room to the side of the hall. The Sorby NHS itself had a stall with displays about its own history, the researches of Henry Clifton Sorby and SNHS publications. Some recent publications were for sale but many more older ones were available free of charge. Not only is SYNHD free to attend but you can catch up with previous research for free as well! The Sorby Invertebrate Group (see Derek Whiteley's first presentation) had a stand with a display of publications, the aims of the Group and distribution maps of Violet Oil Beetle, Dark Green Fritillary Butterfly and Cistus Forester around Sheffield on 7 x 7 hectad maps.

The Thorne & Hatfield Moors Conservation Forum display had a couple of banners with large photographs of the sites, publications such as *Thorne & Hatfield Moors Papers*, *The Story of Ouse Ings*, *Lepidoptera Checklist* and *Botanical Survey* for sale plus compartment maps and *Moor Space* newsletters free of charge.

The Rivelin Valley Conservation Group had a banner with a large habitat photo, the book *Walking the Rivelin*, leaflets and a range of very nice photographs of birds, mammals, flowers, bees and butterflies.

The Friends of Shirtcliffe had a display with a map of the Shirtcliffe valley, herbarium specimens, photos of habitats and a wide range of insects plus a lap top with photos of fungi, bryophytes and vascular plants (all the specimens in the photos and on the lap top were identified with English and scientific names).

Not only is the Sorby one of the largest natural history societies in the north midlands but the city also supports a lot of local groups with site-based interests.

Programme

One of the speakers was unable to attend but the eight lectures ran from 10;30 to 16:30 with a couple of tea/coffee breaks and a lunch break where I had a good natter with friends I had

not seen in a while.

We started with **The work of the Sorby Breck Bird Ringing Group** by Ray Knock, the Group's chairman, a ringing trainer and past member of the BTO Council. For fifty years the Group has ringed birds from north of Sheffield to Belper and 18-20,000 birds are ringed annually. Students are taught the skills of ringing so that they can generate data for use in their own researches.

Ray mentioned the population studies that arise from ringing results, including bird ages. A Manx Shearwater ringed on Bardsey Island in 1977 was being retrapped fifty years later and a Sheffield area Long-tailed Tit was retrapped eight years after being ringed without being seen at all in between. Birds over two years old do not show any changes that allow them to be aged so ringing nestlings is the only way to establish birds of known age as well as providing information on brood sizes and survival rates. SBBRG maintains almost 7,000 nest boxes, putting it in the top ten among British nest recording groups.

Migration studies are the best-known reasons for bird ringing and link data from breeding and wintering areas and results are being used to study the effects of land-use changes across Europe. During 2015 there were over 230,000 retraps in the UK. Ray reported Blackbirds being tracked between South Yorkshire in winter and Scandinavia in summer. Data are shared with BTO and YNU and compiled into publications.

Population studies have allowed status and distribution changes to be recognised and Ray mentioned Cetti's Warbler, which is now established in the Sheffield area. Another local study has shown that Tree Sparrows breed throughout the summer but 1st-year birds moult quite close together, so the birds from later broods have less time to build up their strength than those from early ones.

Ray talked about inernational co-operation with ringers working together on the Seine estuary and in Cyprus for Birdlife International. He talked about monitoring Nightingales in The Gambia, the wintering area for British birds. One of Ray's ringed birds was the first to be retrapped in the UK, thereby establishing the migration path.

Traditional metal rings are still used by bird ringers because they are much cheaper than modern hi-tech tracking systems. However, the costs do mount up and Ray expressed his appreciation of SNHS for the continued support given to SBBRG. He then had to make a quick departure to catch a flight to Atlanta for work!

Patrick Harding's **Foraging for Flowers, Fruits and Fungi in and around Sheffield** was about gathering and eating wild food. He came across Giant Puffballs in dunes in Northern Ireland at about the time that Richard Maybey's *Food for Free* was published and he reported on the problem that was caused by an inadequate illustration that led a few foragers to collect and eat Dog's Mercury. He advised not to burden A&E Departments by following suit! He became interested in edible seaweeds but then moved to Sheffield, about as far from seaweed as you can get in the UK! He became aware of 'Derbyshire Neck', caused by a lack of iodine for precisely that reason.

Although he is a vegetarian he encouraged the carnivores in his audience to consume Grey Squirrels and deer to help conserve the countryside. He then focussed on flowers – those of Elder make cordial and 'champagne', those of limes make tea which is good for colds and Pineapple Weed is an alternative to Chamomile tea, which does not contain caffeine, but Patrick warned against foraging in area where people walk their dogs!

Onto the vegetative parts, Patrick advised us to use Dandelion leaves for salads, their flowers for wine and their roots for caffeine-less coffee but he warned that digging up plants in the wild is against the law. This is a problem with Pignut, which used to be collected and eaten raw and cooked; 'here we go gathering nuts in May' referred to this plant. Wild Arum roots are full of starch and were made into sago. Rising birch sap can be tapped for syrup while Chickweed is wonderful in salads. Wild Garlic leaves make soup and can be wrapped around fish or chicken during cooking. We all know about Watercress, which grows wild in the White Peak, while Sorrel is another plant whose leaves can be used for making soup.

Among wild fruits, Sloes flavour gin (apparently only London has higher gin sales than Sheffield) and Bilberries are edible. Patrick demonstrated a tool for harvesting Bilberry which is used across Europe but not in Britain. Tarts made with Cranberry fruits were a favourite with Queen Victoria and Yew fruits are delicious, despite what the press will advise, but Patrick considered that every utterance from the press on things natural was incorrect!

Finally to fungi, at which point Patrick revealed that his *Gem Guide to Mushrooms* has been revised and republished. Photographs of Jew's/Jelly Ear, Morel and Cep followed. Apparently there have been complaints that humans foraging for food are depriving wildlife and at several points Patrick dispelled the idea that such activity for personal consumption would make a measurable fall in available food.

Val Clinging talked on **100 years of the Sorby Natural History Society**, formed on 1st January 1918 when Britain was at war and society was vastly different from the one we live in. SNHS was formed by the merging of existing societies and Val wondered what prompted them to abandon their separate existences. The Sheffield Microscopical Society was formed in 1877 and provided lectures, practical nights, demonstrations and a conversazione. Henry Clifton Sorby was president three times. The Sheffield Naturalists' Club was formed as a section of the Sheffield Field Naturalists' Society to provide indoor activities, especially in winter, though it later organised field meetings as well! SNC separated from SFNS in 1870 with H.C. Sorby as its first president.

The combined Sorby Scientific Society was named in honour of 'the greatest scientist Sheffield ever produced'. At its first meeting on 25/1/1918 the Sheffield Junior Naturalists' successfully applied to join. Val showed an illustration of the 1918 programme and reports of those early meetings were published in the local press. The earliest known photograph of the society was an outing in 1930 to look at archaeology in York. In 1928 its 'Proceedings vol 1' was published and contained a list of 138 members, only 20 of them being women, all with their honours and qualifications listed. The name changed to its present format in 1932 and in 1938 SNHS elected its first woman president, Dr Edna Lind of Sheffield University, and showed natural history films for the first time.

There was no 'Proceedings vol 2' and almost thirty years passed before the first issue of *The Sorby Record*, the Society's journal, which has been a feature of the society ever since. In the second half of SNHS's existence it has a regular monthly newsletter and programme of meetings. Coach trips are no more but there is a wide range of field trips covering most aspects of natural history, surveys such as Harvest Mouse nest hunts and Mountain Hare Walks (now in their 45th year) and detailed invertebrate surveys. SNHS has now conducted 99 workshops where members attend free courses passing on identification skills. It has a website and active Flickr, Facebook and twitter accounts.

Derek Whiteley's first contribution was **Sorby Invertebrate Group – Recording the things that buzz and have lots of legs**. He reported that the SYNHD was set up in memory of Margaret Shaw and dedicated his talk to local entomologists who had died recently – Peter Skidmore, Eileen Thorpe, John Lintin Smith, Frank Botterill and Austin Brackenbury. SIG is a semi-autonomous part of SNHS to which all members of the society are welcome. Derek reported on the evolution of SNHS's recording area, originally 20 miles from Sheffield City centre which was squared off into a 30km x 50km grid in 1978 but now extending to cover SK05 to SE61 and even beyond. This area includes the Peak District NP, a good part of which is in Yorkshire. SNHS's area of interest is sometimes referred to as 'Sorbyshire' and Derek (with tongue in cheek) explained the boundary revision which now has North Sorbyshire (previously known as Yorkshire), East Sorbyshire (aka Nottinghamshire), South Sorbyshire (Derbyshire) and Southwest Sorbyshire (aka Staffordshire).

There are currently 18 SIG recording schemes holding c.600,000 records and liaising with regional and national recording schemes and LBRCs. These schemes publish maps and species accounts and SNHS web pages carry both published and unpublished papers, including downloadable pdfs of the ongoing 'Insects of South Yorkshire' project and photos on Flickr. Derek demonstrated maps of Green Tiger Beetle using Dmap and the darkling beetle *Lagria hirta* on an OS map base using Recorder 6. SIG (aka Derek) has organised 60 of the SNHS workshops to pass on skills and knowledge in the past 20 years. Attendees use specimens, binocular microscopes and leaders in comfortable venues with tea/coffee/biscuits at no cost. There are opportunities to carry out fieldwork and attendees are encouraged to go on to other courses run by FSC, for example. For the past three years many SNHS workshops have been with the Dearne Valley Landscape Partnership at its Elsecar base. Currently Steven Falk is leading two workshops on bee identifications with 21 attendees at each and there are 23 more on the waiting list hoping for a third! DVLP finances have allowed the purchase of 16 binocular microscopes for use in the workshops. DVLP won the NBN Lynne Farrell Group Award for its outstanding contribution to biological recording at NBN's 2017 conference in Cardiff last year.

Current initiatives include the 'Insects of South Yorkshire', inspired by John Coldwell's 1999 Sorby Record Special Issue *The Insects of Barnsley*. Michael Archer published a review of the aculeate bees and wasps and other sections are on the website. 'Invertebrates of Sheffield Allotments' is a collaboration with the Sheffield Allotment Federation. Two workshops have been held for SAF members and more surveys on allotments will be carried out this year. 'Iconic Peak District Species' is a response to the PDNP State of Nature report which highlighted a lack of good insect data. A lot of tree planting and other land management is proposed, hence the need for information. Lead Rake Robberfly, Northern Wood Ant, Bellflower Picture-wing Fly, Bilberry Bumblebee and Violet Oil Beetle were illustrated and several maps demonstrated,

including fine-scale maps which show the value of detailed recording. Collaboration with the new Southwest Peak Landscape Partnership is being discussed for 2018/19. SIG feeds information to land managers and their management plans, LBRCs and LA ecologists; although SNHS is not a conservation organisation the data it generates are important to those who are.

Dave Buttle has been secretary of the Wharncliffe Heathland Trust for all of the Trust's 18 years, so was ideally placed to give us an informed account of **Wharncliffe Heath**, a 60ha LNR including the Wharncliffe Crags Geological SSSI and a Schedule 1 Ancient Monument with a Mesolithic summer camp, a Bronze Age cairn, evidence of a quern industry both pre- and post-Roman and charcoal and tannin production in the Middle Ages. Post Medieval use has been an estate and deer hunt.

Habitats include the crags, 15ha of heathland, two ponds, acid grassland and wet acid mixed woodland. The wildlife includes Nightjar, Tree Pipit, Cuckoo, Woodcock, Viviparous Lizard, Grass Snake and Green Tiger Beetle (full list on the Trust's website). Management of the site has entailed bashing and cutting Bracken and curtailing birch encroachment, assisted by Sheffield University Conservation Volunteers and Stocksbridge Explorer Scouts, among others. The primary management tools are Shetland Sheep and Shetland Cattle. The latter require winter feeding and water sources, this provided by a pond dug by the Forestry Commission, whom Dave described as much more than landowners. Between them the livestock keep the sward short and the birch under control, producing wood pasture, an almost lost landscape with a range of microniches, while their dung provides nutrients and niches for invertebrates and their predators. The felling of Silver Birch results in Bracken taking over but the heavier cattle damage its rhizomes. Gengerts (portable fenced areas) protect plants from over-grazing. Rhododendron is cut and burned, the latter away from the Ancient Monument. Two projects are underway: one involves the erection of hole nest boxes around the reserve which has resulted in the arrival of a breeding population of Pied Flycatcher. The second has been the erection of bat boxes, monitored by the South Yorkshire Bat Group. Five species of bats are now utilising them. including a breeding colony of Natterer's.

The Trust organises events and activities (listed on its website), some involving SNHS members and has raised awareness of the site in the local community. Dave concluded by saying that he did not think the site would have survived without its LNR designation and management.

Ken Balkow is as accomplished a photographer as he is a botanist and he treated us to a visual feast in his talk on the **Wild plants of the Sheffield & Tinsley Canal**, an account of his surveys from April to September 2017. His photographs started in the centre of Sheffield and progressed eastwards to the M1 at Meadowhall, each one accompanied by information on the (changing) distribution and status of each plant. SNHS member Joan Egan published an account of this same stretch of canal in the 1988 issue of *The Sorby Record*, so there were many comments on the changes in flora since then. For all the botanists reading this, just visualise the following: Fern-grass, Snapdragon, Wild Carrot, Yellow-wort, white-flowered Great Willowherb, Hard Shield-fern, Smooth Hawk's-beard, White, Yellow and Fringed Water-lilies, Greater Duckweed, fruiting Plum (which Ken sampled), Red Valerian, Hemp-agrimony, Dogwood, Traveller's-joy, White Bryony, Common Spotted-orchid, Garden Tree-mallow, Hemlock Water-dropwort, Altar-lily, Skullcap, Hairy-fruited Broom, Ploughman's Spikenard, Bee Orchid, Common Cornsalad, Hare's-foot Clover, Southern Marsh-orchid, Japanese Quince, Narrow-leaved Ragwort, Fennel, Winter-

cress and White Stonecrop. When dealing with the aquatic plants, Ken referred frequently to Ray Goulder's recent paper on plants of the Don catchment in the *Thorne & Hatfield Moors Papers*, unaware that Ray was in his audience! Ken castigated the horticultural trade a couple of times for introducing plants which were virtually indistinguishable from British natives.

The Sheffield & Tinsley Canal is paralleled in its eastern half by Sheffield Supertram and Ken recommended a 'walk out-ride back' visit.

Derek Bateson adopted Gillfield Wood as his 'patch' a few years ago and revealed **More Gillfield Secrets**. This linear wood about one mile long is in VC57 but the county of South Yorkshire has incorporated a large chunk of what was Derbyshire and Totley Brook, which runs through the wood and forms the boundary with modern Derbyshire. Derek's photos illustrated some of the plants, fungi and insects on the site, some of them recently discovered. Yellow Pimpernel, Witches Butter Sloe Bug and Peppered Moth larva were among them.

Derek Whiteley closed the presentations with a report on **Barnsley and Sheffield Butterfly Atlases**. He used maps published in the Millennium Atlas (covering 1995-1999), which he described as the 'gold standard', and the 2010-2015 update to illustrate the changing distributions of Essex Skipper (range extension), Wall (declining throughout central England), Ringlet (great extension in northern England and Scotland and now the most common butterfly in some Sheffield localities) and Brown Argus (expansion of the southern form in the Peak District where the 'Peak District form' has been established a long time). SNHS has published butterfly atlases for Sheffield in 1977, 1981 and 1992 with another in preparation. There were currently 99,000 butterfly records in the SNHS database for the period 1991-2015 with records from almost every 1km square (1439 out of 1500) in the 30km x 50km grid of the society's 'core area'. Derek showed maps of the Green Hairstreak (common west of Sheffield but scarce to the east), Green-veined White (the most widely recorded) and White-letter Hairstreak (well-recorded in the north and east, less so in the south and west. Derek acknowledged the contribution of Rev. Martin Greenland's expertise in finding eggs and larvae).

There had been a great increase in recent records from Barnsley with c.6,000 in 2017. Derek showed the 'recorder league table' for Barnsley with Paul Townsend, Norman Jones, Roger Butterfield and Alwyn Timms the main contributors. Barnsley-centered maps showed the Small Heath in the east and on moorland edges in the west but a gap in the centre, Dingy Skipper across the east but few to the west, Small Tortoiseshell generally distributed, Wall more frequent in the west with some centrally and Essex Skipper putting in an appearance in the east. Marbled White has been a welcome addition at Elsecar Tip and Phoenix Park in the past two years. The targets for 2018 were to involve as many people as possible, visit every 1km square at least once and make a special effort to find scarce butterflies. Records would be shared between SIG, Barnsley BRC, Butterfly Conservation Yorkshire and YNU.

Alistair McLean, the SNHS President, thanked the speakers, attendees, bar staff and Bob Croxton and Peter Clegg. So ended an excellent day highlighting the work of amateur naturalists in South Yorkshire and demonstrating the vitality and enthusiasm of this area's naturalists.

YNU Notice: Possible Forum 2019

At its last meeting the Natural Sciences Forum discussed the possibility of alternating the traditional themed annual conference and its programme of guest speakers with more of a Recorders' Forum where members give talks and present exhibits on any aspect of natural history in the society's taxonomic or geographic area, similar to the South Yorkshire Natural History Day described above. Such an event could be held in collaboration with a local natural history society or national organisation (e.g. the RES's Insect Week). If anyone is interested in organising or helping to organise such an event for 2019 please contact any member of the Executive.

VC63 Excursion Dunford Bridge 19 August 2017

DIPTERA J Coldwell

About ten minutes was spent sweeping bushes near the car park during a lull in the weather which for the most part consisted of heavy rain.

Despite the wet vegetation, over twenty species of fly were recorded, the most interesting being the midge *Macropelopia adaucta*, which does not seem to have been reported in Yorkshire for many years. New to the Barnsley area was the yellow dolichopodid *Xanthochlorus galbanus*, a male and probable female. Also noted were the cranefly *Limonia nubeculosa* and the assassin flies *Hybos culiciformis, Platypalpus longicornis, Platypalpus longiseta, Hilara chorica* and *Rhamphonyia variabilis*. Two soldier-flies were found, *Chorisops tibialis* and *Microchrysa flavicornis* as well as the rhagionid *Rhagio lineola.*

A few acalyptratae were netted within this short window of opportunity. They comprised the lauxaniids *Tricholauxania praeusta* and *Meiosimyza rorida* and the common chloropids *Thaumatomyia notata* and *Elachiptera cornuta*. Two further acalyptrata included *Diastata fuscula* and *Dryope decrepita*, both species well known from this locality and surrounding area. The rather local calyptratae flies *Fannia pallitibia* and *Fannia parva* were found as well as the tachinid *Medina collari.*

This site has proved to be an interesting one for diptera in 2017, producing such scarce species as *Sphegina sibirica, Trypeta immaculata, Beris fuscipes* and *Phytoliriomyza pteridii* to name just a few. It is intended to continue diptera recording here in 2018.

Excursion circulars 2018

Circular No. 905

Divisional Secretary VC63: Joyce Simmons, 16 Springfield Crescent, Kirk Smeaton, Pontefract, WF8 3LE. Tel: 01977 620725 email: joyce@gentian.plus.com

The **VC63** excursion will be to **Thorne Moors National Nature Reserve**, near Goole on **Saturday 19 May**.

Maps: 1:50,000 Landranger sheet: 112
1:25,000 Explorer sheet: 291 Goole & Gilberdyke

Meeting Place: We will be visiting a part of Thorne Moors through a gate which is kept locked by English Nature (EN). Therefore, please arrive before 10:15 or let me know that you will be late (07482 110151) to ensure entry to the site. However, the gate will be open on the evening of 18 May to allow moth trappers to set up traps. Please let me know if you wish to enter in the evening as we will need to arrange a time to suit EN. Mercury vapour traps may be a problem as high intensity light could disturb nesting Cranes. Siting of traps can only be determined when the positions of Crane nests are known.

To reach the meeting place: Leave the M62 at junction 36. At the roundabout on the south side of this junction take the A161 signed 'Old Goole and Docks'. At the Docks turn right at the T junction. Continue on the A161 through Swinefleet. Immediately after the last house turn right on a minor road signed 'Peat Works' (Reading Gate). Travel south for 5km (note that the road is narrow, uneven and deviates from straight at some crossing roads). The road then turns right for 1.5km to the gated entrance on Swinefleet Warping Drain (SE755171). Please arrive at this point well before 10:15, where further directions to the meeting point will be given.

Reporting Meeting: The meeting will be at 16:00 in Swinefleet Village Hall (SE772223). On leaving the field meeting, return along Reading Gate. At the T junction with the A161 turn left into Swinefleet. In half a kilometre turn right by a filling station. The Village Hall is immediately on the right with parking in front of the hall, which will be open from 15:30. Tea and coffee will be available for a small charge.

The area: Thorne Moors cover around 1900ha, which, with Hatfield Moors, is the largest area of raised peat mire in the UK.

The underlying geology consists of Carboniferous Limestone overlaid with Coal Measures of mudstones, siltstones, and sandstones with coal seams. Glacial deposits overlayed this below Lake Humber, which was probably formed during the last glaciation by ice blocking drainage to the North Sea. Lake Humber then silted up with sand and clay. Watercourses meandered across the flat land which was boggy and swampy. Drainage began in 1626 and continued for peat cutting, which at first was for fuel and very limited, then for horse bedding, finally intensifying to an industrial scale in recent times for gardening. The last phase of peat cutting involved intensive drainage so that peat could be removed dry by huge milling machines.

Various schemes were devised to use this 'wasteland' - an airport, a dumping ground for slag and a colliery spoil site. Local opposition, led by William Bunting, eventually resulted in the peat extraction company being bought out in 2002 and the Moors becoming a National Nature Reserve managed by Natural England. Since then the drainage dykes have been blocked and the hydrology of the Moors is slowly being restored (see Plate 7, centre pages). The removal of Silver Birch *Betula pendula* and *Rhododendron ponticum* is constantly necessary. The area now has SSSI, SPA and SAC statuses.

The special conditions of Thorne Moor, as well as its relative isolation, have lead to the development of a rare assemblage of flora and fauna. Two hundred and forty species of bird have been recorded, including Woodlark *Lullula arborea*, Nightjar *Caprimulgus europaeus* and Hobby *Falco subbuteo,* which nest on the Moors together with a small number of Common Cranes *Grus grus*. An inventory of the invertebrates of the Moors published in 2006 by Peter Skidmore lists at least 3500 species. The Sundew Plume Moth *Buckleria paludium* was rediscovered in 2016 (last seen in 1891). There are 4 species of amphibian and 3 reptiles present as well as more than 260 fungi. Of the 400 plants recorded, Greater Bladderwort *Utricularia vulgaris* (see Plate 7, centre pages), Cranberry *Vaccinium oxycoccos*, Bog Rosemary *Andromeda polifolia* and Great Fen Sedge *Cladium mariscus* can be found. Mosses and liverworts are plentiful: 127 species have been recorded.

Hazards of the area: There are good paths along the raised banks, but between are boggy areas with deep pools, very hazardous to those who do not know the area. It is advisable to wear rubber boots, particularly if it has been wet. There are Adders *Vivpera berus*, but these are likely to hide when approached rather than be aggressive.

I am grateful to Ian MacDonald for suggesting this visit and giving me lots of background information, and to Tim Kohler of EN who has supplied very valuable help and is facilitating our access.

Circular No. 906

Divisional Secretary VC64: **Ken White**, Yonder Cottage, Ashford Hill, Thatcham,Berkshire, RG19 8AX. Tel: 01635 268442. Email:white.zoothera@gmail.com

The **VC64** Meeting will be held **at Swarth Moor SSSI** on **Saturday 23rd June.**
The Lepidoptera group are invited to trap in the area on 22 June (Friday night). Meet at the car park at Helwith Bridge (SD810694) at 19:30. No electricity supplies are available.

Maps: 1:50 000 Landranger Sheet: 98 Wensleydale and Upper Wharfedale
1:25 000 Explorer Sheet: OL2 Yorkshire Dales Southern and Western Areas

Meeting Place: We will meet in the car park at Helwith Bridge (SD810694) at 10:30am. From the B6479 Settle to Horton-in-Ribblesdale road, one and three quarter miles south of Horton, turn west signed Helwith Bridge and Austwick (Austwick Road). Cross the river and shortly after passing the Helwith Bridge Inn, turn left towards the Helwith Bridge Fly Fishery and the car park is immediately on your left. For those using SatNav, the postcode of the Helwith Bridge Inn,

BD24 0EH, is very close to the meeting place.

Reporting Meeting: This will be at 4:30 pm in the Helwith Bridge Inn, SD8116950 (BD24 0EH) where the small dining room has been reserved for us between 4:00pm and 5.30pm. Members will be able to purchase their own refreshments.

The Area: The basement rocks of the area are mid-Silurian sandstones and siltstones of the Austwick and Horton Formations respectively; later tectonic events tilted and metamorphosed the siltstones into slates. A long period of erosion and eventual submergence under a warm tropical Carboniferous sea resulted in the spectacular unconformity seen in the disused quarry face of Foredale Quarry. The softer sandstones have been eroded into the valleys and the more resistant Kilnsey Formation limestones cap the upper hillsides to the west. The slates were quarried for roofing tiles, flag stones and building stone. Of late, the gritty Greywackes are being quarried as road stone aggregate due to their high resistance to polishing. With the retreat of the ice sheets, glacial moraines briefly dammed the valley creating a temporary lake, but early on these were breached by the valley rivers, so Swarth Moor mire remains the last vestige of a more extensive feature.

Swarth Moor SSSI is a nationally important lowland raised mire in Ribblesdale, lying adjacent to Dry Rigg Quarry. The central bog surface has a visibly domed profile of acid vegetation and grades to the north and south into fen grassland communities influenced by the base-rich water draining the quarry. A detailed NVC vegetation survey was carried out in 2004.

The central part of the site comprises a raised mire community (M18a). In the wetter areas, Cross-leaved Heath *Erica tetralix* is typically abundant with Cranberry *Vaccinium oxycoccus* sprawling over a *Sphagnum* carpet together with Bog Rosemary *Andromeda polifolia*, Round-leaved Sundew *Drosera rotundifolia* and Bog Asphodel *Narthecium ossifragum.* Occasional small bog pools (M2b) occur containing a carpet of *Sphagnum* with a canopy of Common Cottongrass *Eriophorum angustifolium*. The raised mire is, however, of variable quality and slightly more elevated areas are dominated by a very species-poor tussocky Purple Moor-grass *Molinia caerulea* sward (M25a) indicative of drying of the peat surface. A more varied *Molinia* community (M26a) occurs just south of Combs Dyke which includes fen and wet grassland associates such as Wood Anemone *Anemone nemorosa*, Angelica *Angelica sylvestris*, Marsh Valerian *Valeriana dioica* and Common Sedge *Carex nigra*.

An extensive and varied fen community (M9b) occurs to the south of the ponds around the outlet stream and is characterised by stands of Bottle Sedge *Carex rostrata* with Bogbean *Menyanthes trifoliata*, Marsh Violet *Viola palustris* and Marsh Cinquefoil *Comarium palustre*. Between the main bog and marginal fen communities are pools and developing carr woodland of Bay Willow *Salix pentandra* and Grey Sallow *S. cinerea*.

The northern part of the site, Studfold Moss lying to the north of Combs Dyke, supports a tall-herb fen containing extensive stands of Meadowsweet *Filipendula ulmaria* with Valerian *Valeriana officinalis* and Angelica.

Small areas adjacent to the southern outlet stream comprise an extremely diverse small sedge community (M10a) associated with the moving base-rich water and containing Few-flowered

Spike-rush *Eleocharis quinqueflora*, Dioecious Sedge *Carex dioica*, Butterwort *Pinguicula vulgaris* and Lesser Clubmoss *Selaginella selaginoides*.
Marsh Violets at this site support a Small Pearl-bordered Fritillary population which is the subject of a student study under the supervision of Terry Whitaker.

There is a long history of human impact on this site, although not all of it has been deleterious. As large areas of the original bog surface have dried out, the better quality bog vegetation is now associated with small-scale peat cuttings; moreover, the base-rich water draining through the site from the quarry is associated with some of the richer fen vegetation. However, the impact of fine wind-blown dust from the quarry, atmospheric nitrogen as well as runoff of agrochemicals from adjacent farmland has adversely affected the site.

A restoration project for Swarth Moor is included in the Ingleborough Dales Landscape Partnership 'Stories in Stone' Scheme, funded through the Heritage Lottery Fund. Through this, it is hoped that raising water levels on the central peat dome will promote *Sphagnum* growth and keep the bog surface active, in turn reducing the dominance of Purple Moor-grass. Work to achieve this through re-wetting will take place in 2017-18 winter months.

Natural England, which owns part of the site, will welcome our records and observations on the site, particularly to contribute to the restoration scheme. We shall also have access to a regenerating area of quarry floor in the disused area of the quarry by kind permission of Lafarge Aggregates. Moth traps will be set up the previous night and examined early on the Saturday morning.

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Circular No. 907

Divisional Secretary VC65: Terry Whitaker, 4 Crowtrees, Low Bentham, Lancaster, LA2 7EE. Tel: 015242 62269. Email: t.whitaker1@btinternet.com

The **VC65** Meeting will be held at **Dent, Northern Barbondale (SD679861)** on **July 7th 2018**.

Maps: OS Explorer Map OL2 Yorkshire Dales, 1:25,000.

Meeting Place: The public car park in Dent Village (SD704870) at 10:30.

Reporting Meeting: Dent Village tba

The Lepidoptera group is invited to trap in the area on 6 July (Friday night). Meet at roadside (SD679861). No electricity supplies are available.

The Area: Barbondale is situated on the very western edge of the Yorkshire Dales. Here Barkin Beck flows in an exposed, broad, U-shaped valley with moors and fells to either side. The beck shortly to become Barbon Beck flows southwestward towards the River Lune following the line of the Dent Fault, which forms the western boundary fault of the Askrigg block. To the eastern side are the Carboniferous limestone series whilst to the west side are Palaeozoic rocks of Silurian age. Much of solid geology is hidden under glacial sediments or hill peat.

Hence the area shows contrasting biotopes from calcareous grassland, limestone and acidic rock crags while on areas with impeded drainage it is blanket bog and wet heath. Heather moorland dominates the higher land whilst down steep ghylls towards Gawthrop are pockets of broadleaf and coniferous woodland.

Combe Scar SSSI (SD677876), the north-facing amphitheatre of Great Combe (500m), lies to the North and is formed where the Dent Fault brought Upper Silurian Coniston Grits into contact with Coniston Flags (Lower Silurian) and volcanic rocks of Ordovician age. The variety of rocks on the site has influenced the overlying soils by providing base-rich and base-poor conditions. The site comprises an impressive glacial cirque with cliffs and screes together with flushed grasslands and a mire formed below.

The great variety of plant communities to be found in this area make it worth making the 1km easy walk round the contours a priority for our visit. The iconic Peregrine Falcon and Raven nest on the cliffs and should be seen. The SSSI is notable for the variety of plants associated with the rocky slopes and the flushes, especially sedges such as Tawny Sedge *Carex hostiana*, Glaucous Sedge *C. flacca*, Common Yellow-sedge *C. demissa* and Carnation Sedge *C. panicea*. Also present are Round-leaved Sundew, Autumnal Hawkbit *Leontodon autumnalis*, Bog Asphodel, Grass-of-Parnassus *Parnassia palustris*, Common Lousewort *Pedicularis sylvatica*, Common Butterwort, Selfheal *Prunella vulgaris*, Devil's-bit Scabious *Succisa pratensis*, and in muddy areas Marsh Arrowgrass *Triglochin palustris* and Lesser Clubmoss. The northern speciality Bird's-eye Primrose *Primula farinosa* is widespread. The bryophytes are particularly rich, including base-loving ones such as *Aneura pinguis, Drepanocladus revolvens, Scorpidium scorpioides, Campylium stellatum* and *Sphagnum warnstorfii*. In the stream gullies *Cratoneuron commutatum* is again present in abundance and additional plants such as Mossy Saxifrage *Saxifraga hypnoides*, Marsh Hawk's-beard *Crepis paludosa*, Meadowsweet, Great Wood-rush *Luzula sylvatica*, Brittle Bladder-fern *Cystopteris fragilis* and Wilson's Filmy-fern *Hymenophyllum wilsonii* are present, as well as other mosses such as *Bryum pseudotriquetrum, Ctenidium molluscum* and *Bartramia pomiformis*. The Juncus-dominated (NVC M23) mire on the flatter ground is one of the few VC65 sites for Small Pearl-bordered Fritillary (Whitaker, 2008). The moths of the site are not well known but the uncommon day-flying Small Purple-barred *Phytometra viridaria* is recorded here. Little is known about the invertebrate communities.

Previous YNU visits to the area

Over the years there have been several YNU visits to the area (the latest by the Mollusca and the Freshwater Sections in 2017) but these were mainly to the River Dee valley rather than to the higher ground.

YNU Excursion 116 (22.5.1889) Dent/Valley of Dee
YNU Excursion 147 (3-5 9.1904) Dent
YNU Excursion 224 (14.5.1921) Dent
YNU Excursion 284 (3-5.6.1933) Dent
YNU Excursion 337 (27.5.1944) Dent
YNU Excursion 512 (19-20.5.1979) Dent

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YNU (1900) YNU Trans. Suppl 143: 26.
YNU (1904) YNU Trans. Suppl 183: 31.
YNU (1904) Naturalist, 29: 299-304.
YNU (1921) YNU Separate, 292: 299-304.
YNU (1921) Naturalist, 46: 273-281.
YNU (1933) YNU Naturalist Suppl., 376: 58.
YNU (1933) Naturalist, 58: 181-190.
YNU (1944) YNU Naturalist Suppl. 451: 69.
YNU (1944) Naturalist, 69: 145-147.
YNU (1980) YNU Separate, 708.
YNU (1980) Naturalist, 105: 121-123.

Circular No. 908

Divisional secretary VC61: Sarah White, Yonder Cottage, Ashford Hill, Thatcham, Berkshire, RG19 8AX. Tel: 01635 268442. Email: white.priests@gmail.com

The **VC61** Meeting will be held at **Spurn** on **Saturday 21st and Sunday 22nd July 2018**.

The aim of the meeting is to combine a social event with our usual recording activities. Members may choose to stay overnight for one, two or three nights - or to come just for the day either on Saturday or Sunday.

There will be a programme of optional guided activities, although members will also be free to carry out their own independent recording if they prefer. Joining a guided session also offers an opportunity for new members to get involved or for people to learn about new taxa.

Maps: 1:50 000 Landranger Sheet: 107 Kingston upon Hull.
1:25 000 Explorer Sheet: 292 Withernsea and Spurn Head.

Meeting Place: On Saturday and Sunday members arriving fo the day will rendezvous with residents in the new YWT car park by the Discovery Centre (TA416154) at 10:30am. Parking here is free to YWT members and £4 for the day for non members. It is also possible to park cars free in the public car park at the Blue Bell (TA417158) and walk onto the reserve.

Tea and Reporting meeting: For both day visitors and residents, this will take place at 4:30pm on both Saturday and Sunday in the new YWT Discovery Centre, where YWT is kindly giving us the use of its Education Room. The room will be open for us all day and will also provide a refuge in the event of poor weather, or to display and identify specimens (microscopes will be available). Facilities include toilets and a cafe (cafe closes 5pm).

Dogs are not allowed on the reserve and there may be some access restrictions because of breeding birds. These will be identified at the start of each day.

Optional guided activities during Saturday and Sunday will include:

- Bird ringing and moth trapping
- Strandline/geological/geographical/historical walk
- Early morning bird walk
- Entomology, including specialist guidance on dragonflies and beetles
- Botanical Ramble
- Visit to the new YWT Kilnsea Wetlands reserve.
- Unimog Safari - run by YWT to the Point, a two and a half hour trip at £12 each. There will be an opportunity to take the Unimog to the Point in the morning and return in the afternoon to allow survey time at the Point.

The programme will be finalized nearer the time and according to weather conditions, so please contact me in advance if you wish to attend a specific activity.

Tides: Saturday: High tides are at 1:02pm on Saturday and 2:12pm on Sunday.

Accommodation: Residential accommodation will be available at the new Spurn Bird Observatory, costing a maximum of £16 per person per night. (This is the concessionary YNU rate). It is self-catering, hostel-type accommodation; no meals are provided but there are shared kitchen facilities; we will need to take our own bedding and towels.(See: http://www.spurnbirdobservatory.co.uk/)

Please book through me, Sarah White, <white.priests@gmail.com> (01635 268442)
No payment is needed in advance.

There is also a nearby Bed and Breakfast at Westmere Farm (www.westmerefarm.co.uk/ 01964 650258). Bookings for this should be made direct with them, but please also let me know that you will be staying.

Meal Arrangements for Residents:
Friday 20th: Optional pub supper for those staying on Friday night.
Saturday 21st: BBQ at the Observatory at 6.30pm. Members coming for the day would be welcome to join us if they book with me in advance.
Sunday 22nd: Those staying will make their own meal arrangements.

The Area: Spurn is a Yorkshire Wildlife Trust Reserve, a National Nature Reserve, part of the Humber Estuary SSSI and designated Heritage Coast. The Spurn Bird Observatory has been operational at the site since 1945, recording and ringing birds. To the north is the new YWT Kilnsea Wetlands reserve.

The coastal geomorphology of Spurn is of national importance: it is an outstanding example of a dynamic spit system with sediment from the Holderness coast feeding its extension across the mouth of the Humber estuary. Its position shifts continuously in response to erosion of the coastline to the north and a recent breach means that the Point is now cut off at the highest tides.

The peninsula supports a range of coastal habitats including intertidal sand and mud, saltmarsh, sand dunes (see Plate 7, centre page), herb-rich grassland, scrub (in particular of Sea Buckthorn *Hippophae rhamnoides*), and brackish pools. Sand dunes at Spurn include examples of strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland, and the nationally scarce Suffocated Clover *Trifolium suffocatum* occurs here.

The adjacent Humber estuary is of particular importance for the number of wintering wildfowl and waders it supports. The estuary regularly supports 22 species of wintering waterfowl in nationally important numbers. These are: Bittern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Pochard, Scaup, Goldeneye, Oystercatcher, Avocet, Ringed, Golden and Grey Plovers, Lapwing, Knot, Sanderling, Dunlin, Black-tailed and Bar-tailed Godwits, Curlew, Redshank and Turnstone. In addition, nine species of passage waders regularly occur in nationally important numbers on the Humber Estuary. These are: Ringed and Grey Plovers, Sanderling, Dunlin, Ruff, Black-tailed Godwit, Whimbrel, Redshank and Greenshank. Spurn is famous for migration, with large numbers of birds passing through in spring and autumn.

Assemblages of terrestrial and aquatic invertebrates are well represented across the Humber Estuary and its margins. These include many scarce and threatened species across a range of taxa, especially the Coleoptera and Lepidoptera. For example, the sand dunes at Spurn support the ground beetle *Amara lucida*, the White Colon *Sideridis albicolon* and Shore Wainscot *Mythimna litoralis* moths. Saltmarshes such as those at Welwick provide foraging grounds for the solitary bee *Colletes halophilus*, which is closely associated with the flowers of Sea Aster *Aster tripolium*, which is also the larval food plant for the Star-wort moth *Cucullia asteris*.

The nearby YWT Kilnsea Wetlands Reserve (TA 405167) has been created to compensate for habitat being lost on the eroding Holderness coastline and is intended to provide a refuge for roosting passage and wintering waders leaving the Humber mudflats at high tide. This 35ha area, comprising freshwater and saline pools with islands and wet grassland, was agricultural land until 2011. Now managed in partnership with the Environment Agency, it is hoped it may also prove suitable for some breeding waders, as well as supporting increasing botanical and entomological interest. There is off-road parking, a hide and a footpath linking with the Blue Bell via Beacon Lagoons.

The whole area is well recorded, both historically and currently, particularly for birds (Chislett, 1996; Pashby, 1988; Roadhouse, 2016) and flowering plants (Crackles, 1975), while the annual Spurn Bird Observatory Report Spurn Wildlife includes not only records of birds and ringing recoveries but also mammals, dragonflies, damselflies, butterflies and moths.

The most recent YNU Excursions to the area were in 1994 (Kilnsea); 1998 (Welwick Saltmarsh); 2003 (Old Hall Farm, Skeffling); 2011 (Spurn).

References:
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Crackles, F.E. (1975) The Flowering Plants of Spurn Point. *The Naturalist*, 1975: 59-65. (Reprinted and updated as a separate leaflet, 1986).
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Pringle, A. (2003) *Classic Landforms of the Coast of the East Riding of Yorkshire*. Geographical Association.
Roadhouse, A. (2016) *The Birds of Spurn*, Spurn Bird Observatory Trust.
Spence, B.R. (1991) *The Moths and Butterflies of Spurn*. Spurn Bird Observatory.
Spurn Bird Observatory Trust (2017) Spurn Wildlife 2016. www.spurnbirdobservatory.co.uk http://www.ywt.org.uk/spurn-national-nature-reserve

Circular No. 909

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The **VC62** meeting will be held at **Sutton Bank** on **Saturday 18 August 2018.**

Maps: 1:50,000 Landranger Sheet: 100 Malton, Pickering & surrounding area.
1:25,000 Explorer Sheet: OL26 North York Moors Western Area.

Meeting Place: Meet at 10:30 at the car park at Sutton Bank National Park Centre YO7 2EH (SE516830). There is a charge for parking, currently £4.50 per day.

Reporting Meeting: Meet at 16:30 at the National Park Centre where there is a cafe.

The area: There are several sites which could be visited during the day. These include Garbutt Wood (YWT Reserve and SSSI). This wood lies on Upper and Middle Jurassic strata, including calcareous grits, limestones, shales and sandstones. The Reserve includes the 20m high sheer face of Whitestone Cliff just inside its eastern boundary. The woodland is made up of oaks, Silver Birch *Betula pendula* and Sycamore *Acer pseudoplatanus*, with an understory of Rowan *Sorbus aucuparia*, Holly *Ilex aquifolium* and Hazel *Corylus avellana*. The ground flora includes Broad Buckler-fern *Dryopteris dilatata*, Moschatel *Adoxa moschatellina*, Bluebell *Hyacinthoides non-scripta* and extensive areas of Wood-sorrel *Oxalis acetosella*. Common Spotted-orchid *Dactylorhiza fuchsii*, Ragged Robin *Silene flos-cuculi*, Common Fleabane *Pulicaria dysenterica* and Valerian occur in an area of wet grassy flushes at the north-west of the Reserve. Common Rock-rose *Helianthemum nummularium*, Bloody Crane's-bill *Geranium sanguineum* and Lady's Bedstraw *Galium verum* can be found on the exposed cliff face. Butterflies include Small Heath, Ringlet, Green Hairstreak and Holly Blue.

To the south-west of Garbutt Wood Reserve lies Lake Gormire (part of the same SSSI but not part of the reserve). This is a natural lake formed in a glacial overflow channel, dammed at one end

by a large landslip. Plants occurring around the lake margin include Water Horsetail *Equisetum fluviatile*, Bottle Sedge, White Sedge *C. canescens*, Common Sedge, Great Reedmace *Typha latifolia*, Common Cottongrass, Bogbean, Marsh Cinquefoil and Tufted Loosestrife *Lysimachia thyrsiflora*. At the eastern end there is Water Mint *Mentha aquatica*, Skullcap *Scutellaria galericulata*, Lesser Marshwort *Apium inundatum*, Marsh Speedwell *Veronica scutellata* and Common Spotted-orchid.

Other areas that could be visited during the day include those beside the Cleveland Way Footpath running north-west from Sutton Bank car park along the top of Whitestone Cliff and south towards Roulston Scar and the Kilburn White Horse. Below the latter lies Hood Hill Plantation, an extensive area of open-access mixed woodland.

Previous visits:

07.10.1882 Report: Naturalist 1882-3, vol. 8, pp 62-64.
15-17.05.1948 Report: Naturalist 1948, vol. 73, pp 157-164.

Hazards of the area: The footpath leading down from the Sutton Bank car park down through Garbutt Wood to Lake Gormire is steep and rocky in places. Parts of the lake shore are boggy. The footpath above Whitestone Cliff runs close to the edge from where there is a sheer drop of up to 20m. Similarly, the footpath running south above Hood Hill Plantation is close to the very steep scarp edge.

Errata

In Table 1 of *Thirty Years of Garden Wildlife. Inspired by Jennifer Owen* by John Bowers (*The Naturalist* 142: 82-86) the total number of insect species should read 1896, not 1440, and the total species should read 2074, not 1730.

In Table 2 of *Mass mortality of adult Common Toads at two breeding sites in Yorkshire* by Richard Shillaker and Martin Roberts (*The Naturalist* 142: 178-190) we were in error to cite Alderton *et al.* (2015) as having found Toad bones in Otter spraints. In this study, no distinction was made between the bones of Common Toad and the bones of Common Frog in Otter spraints (Alderton pers. comm.).

General Data Protection Regulation and the YNU

Clare Langrick and Paula Lightfoot

The General Data Protection Regulation (GDPR) comes into force on the 25 May 2018, enacted through the Data Protection Act (2018). This new legislation aims to be more transparent and to give individuals greater protection and rights over how their personal data are collected, stored and used by organisations. The legislation is only applicable to individuals' personal data; it does not apply to data on organisations.

The GDPR sets out six Principles of Data Protection which require personal data to be:

1. processed lawfully, fairly and in a transparent manner;
2. collected for a specific purpose and only used for that purpose;
3. adequate, relevant and limited to what is necessary;
4. accurate, kept up to date and able to be erased or rectified as necessary;
5. kept in a form that permits individual identification no longer than is necessary;
6. processed in a manner that ensures appropriate data security.

Under GDPR, individuals also have the 'right to be forgotten' by an organisation at any time, meaning that the organisation would need to delete all contact details if requested, and take reasonable steps to remove all trace of that individual and their links to the organisation.

The YNU has been reviewing our protocols for storing and using members' personal data with the aim of ensuring that we are compliant with the new legislation.

The YNU holds members' contact details in a Microsoft Access database which is stored on a secure, backed-up server at the North and East Yorkshire Ecological Data Centre offices in York. These data are used to enable us to post publications to members, to send monthly updates about news and events by e-mail, to process Gift Aid claims and to contact members about due subscriptions. Contact details for individuals who have created an account on the YNU website are stored on the website, but access to those details is restricted to the YNU Webmaster and Treasurer.

Contact details are never passed to third parties and the YNU does not undertake fundraising or campaigning activities.

In order to be fully compliant with the new legislation, the YNU will make the following small changes to our operations:

- New members joining after 25 May 2018 will be invited to opt in to receive electronic communications such as our monthly e-newsletter. A tick box will be added to paper and online membership forms to facilitate this.
- Electronic communications such as our monthly e-newsletter will include a disclaimer enabling recipients to opt out of receiving further electronic communications.
- We will update our Privacy Policy (www.ynu.org.uk/privacy_policy) to refer explicitly to the GDPR's six Principles of Data Protection and the 'right to be forgotten'.
- We will determine the length of time online transactions shall be stored on the YNU website before being deleted, and add this information to the Privacy Policy.
- The YNU Membership Secretary, Clare Langrick (membership@ynu.org.uk), will be the named point of contact for data protection enquiries.

Obituary: John E. Dale 1929-2017

John Edward Dale, whose contribution to the understanding of Yorkshire's ornithology was immense, died on 23 December 2017, at the age of 88. John had been interested in birds all his life and the formation of Huddersfield Birdwatchers' Club in 1966 was the springboard which propelled him into a lifetime of deep involvement in ornithology. It was not long after the formation of the Club that John became officially involved, for in 1969 he took on the role of recorder. John continued in the position of report writer/editor, with a well-earned respite in 1974, until 1988. It was during this time, 1976-78, that John also found time to become the Club's President, a role he also carried out from 1990-92.

When the Club decided to undertake a breeding bird atlas to run parallel with the BTO breeding atlas of 1988-91, John was quick to embrace the opportunity and became responsible for collecting and collating records for certain 10km squares and, later becoming co-editor. Although John's stint as President from 1990-92 was his last role in officialdom, he continued to attend Club meetings until 2010 and was always willing to offer advice. For his services to the Club, John was honoured with Life Membership in 1992.

John's contribution to the ornithology of the county went beyond the Huddersfield area, for he was also a leading light for a good number of years in the Ornithological Section of the Yorkshire Naturalists' Union. John's first major contribution to the YNU was compiling the Ornithological Report for 1967-69. This was a single volume report and John had the assistance of Derek Lees-Smith and Athol Wallis. The reports from 1980-84, however, were all single volumes and were all compiled by John. For the 1985 report, his last for the YNU, he was assisted by Bill Curtis.

John's dedication within the YNU wasn't confined only to report writing. For a total of fourteen years (1974-80 and 1989-96) he was the VC63 recorder, meticulously entering thousands of records on 8" x 5" cards (there were no computers in those days). Not wanting the grass to grow under his feet, he became the Chairman of the Ornithological Committee in 1989, a role he maintained until 1996. This dedication to the YNU resulted in him being honoured with the role of President for the year 1999.

Personally, I owe a great gratitude to John. When I, and other young members, were fledgling birdwatchers he took us under his wing and tutored us on identification and field craft. I well remember spending many hours being taught gull identification in the hide at Blackmoorfoot Reservoir. It is John's dedication to my ornithological education that has set me in good stead ever since and something of which I am greatly appreciative.

John's contribution to Yorkshire's ornithology cannot be denied, and the ornithological world has lost a great and respected player. Our deepest sympathies go to his son Michael, the only remaining relative.

MD

YNU Calendar 2018

Events up to the end of September are shown. Up-to-date information and further details can be found at www.ynu.org.uk/events, and the YNU Membership Card.

Apr	28	Botanical Section meeting at Bishop Wood, Selby. Meet at 10:30 off Scalm Lane at SE560332. Joint meeting with Bradford Botany Group.
May	5	Conchological Section Leavening Brow VC61. Meet at 11:00 at SE79446320.
	5	Bryological Society meeting at Anston Stones Wood (VC63). Meet at 10:00 in lay-by on A57 at SK536828.
	10	Entomological Section meeting at Blackmoorfoot Reservoir. Meet at 10:30 at SE099123 on south bank.
	19	**VC63 South West Yorkshire Excursion to Thorne Moors** (SE75511714). See p68.
	19	Marine & Coastal Section meeting at Thornwick Bay, Flamborough. Meet at 12:00 in the car park (TA233719) before the cafe car park.
	25	Entomological Section meeting at Rushy Moor and Shirley Pool SSSI, Askern. Joint meeting with Botanical Section (see below).
	25	Botanical Section meeting at Rushy Moor and Shirley Pool SSSI. Meet at 10:00. Car parking on private land at Sutton Common by permission of Carstairs Countryside Trust. Access from A19 at SE557123. Contact Louise Hill (01302 322956) if you are planning to attend.
June	2	Entomological Section meeting at Birch Wood YWT reserve, Bilsdale. Meet at 10:30 at SE56969201. See Membership Card for further info.
	9	Conchological Section joint meeting with YNU Freshwater Ecology Section. Gayle Beck and Aysgill Force. See below for details.
	9	Freshwater Ecology Section meeting at Gayle Beck and Aysgill Force. Meet at 10:30 at Gayle Lane car park, Hawes SD870897.
	16	Marine & Coastal Section meeting at North Bay Scarborough. Meet at 11:00 in the pay and display car park next to the Sealife Centre (TA035907).
	23	**VC64 Mid West Yorkshire Excursion to Swarth Moor** (SD810694). See p69.
	30	Botanical Section meeting at Gypsy Marsh, Dearne Valley. Meet at 10:30 in car park at SE419024.
July	7	**VC65 North West Yorkshire Excursion to Dent** (SD679861). See p71.
	15	Marine & Coastal Section meeting at Filey Brigg. Meet at 11:00 in car park (fee) next to Sealife Centre (TA120814).
	21-22	**VC61 South East Yorkshire Excursion to Spurn Point** (TA416154). See p73.
Aug	4	Marine & Coastal Section meeting at Spurn. Meet at 11:00 at the Spurn Discovery Centre (TA416153).
	12	Joint Marine & Coastal/Conchological Sections Meeting to Sandsend near Whitby. Meet at 10:00 in the pay and display car park next to the Wits End cafe (NZ860129).
	18	**VC62 North East Yorkshire Excursion to Sutton Bank** (SE516830). See p76.
Sept	8	Conchological Section - Ellers Spring and Thornton Dale. Meet at 11:00 in Dalby Forest Visitor Centre car park at SE855875
	9	Entomological Section meeting at Dearne Valley Country Park. Details tba.
	9	Marine & Coastal Section meeting at Boggle Hole. Meet in the car park on Holm Bridge Lane (NZ952037) at 9:00.
	27	Basic Field Skills for University of Leeds MSc Students. St Chad's Parish Centre, Headingley, Leeds.
Nov	3	**YNU AGM** St Chad's Parish Centre, Otley Road, Far Headingley, Leeds, LS16 5JT

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editor@ynu.org.uk

Please look at a recent issue of the journal for a general idea of how to present your article. Also see *The Naturalist - Guidance for authors* at www.ynu.org.uk/naturalist and please **avoid** the following:

- using any paragraph formatting and line spacings other than single.
- using tabs to tabulate information (please use MS Word table format).
- inserting any figures, graphs or plates into the text; indicate their proposed locations in the text and send them as separate files.

Good quality, high resolution images are very welcome and should be sent as .jpg files, with a separate MS Word file containing the caption and name of the person to whom the image should be attributed.

If electronic submission is not possible, contributions should be sent to Dr. A. Millard, Woodland Villas, 86 Bachelor Lane, Horsforth, Leeds LS18 5NF (Tel. 0113 258 2482).

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